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Addresses

INFANT MORTALITY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON DISEASES OF CHILDREN, AT THE FIFTY-NINTH ANNUAL SESSION, AMERICAN MEDICAL ASSOCIATION, 1908.

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The modern tendency in medicine is to concentrate each individual's efforts within comparatively narrow limits; if possible, to add some new facts or theories to present knowledge. The sum total of all the additions and advances has revolutionized medical knowledge in the last twenty years. Countless intelligent and zealous physicians working along different lines and in special departments of medicine have made it difficult, if not impossible, for any one to keep fully abreast of the times in all branches of medical science.

Perhaps this tendency in modern medical study has led to the neglect of certain broad principles of hygiene, diet, fresh air, bathing and general methods of living; these, being every one's business, have become no one's business.

John Gardner, surgeon, London, wrote in 1838 an interesting pamphlet on "Why So Large a Number of Children Perish." He appreciated certain physiologic differences between a child and an adult, and under "Dentition" wrote:

> The true nature of the effect of this natural process on the health and life of children is much misapprehended. In a healthy body, the teeth are always cut without suffering, and not far wide of the ninth month. The passage of the teeth through the gums produces a slight excitement, which is not a deviation from health.

Benjamin J. Crew, of Philadelphia, wrote in 1882 an excellent article on "The Care of Deserted Infants," which was read before the Assembly Meeting of the Philadelphia Society for Organizing Charity, in March of that year. In this article he strongly advocates a combination of "placing out" and "asylum plan" for these infants and quotes statistics which clearly prove how great is the reduction in the mortality in infants under the plan of treatment advocated.

J. Brendon Curgenven, M.R.C.S., London, 1867, writing on "The Waste of Infant Life," states that the excess of infantile mortality occurs in laboring people. The poorer and lower classes show a mortality of 35 to 55 per cent. under the age of five years; the educated and well-to-do, only 11 per cent. He analyzes the Registrar General's report, and shows clearly the causes of this excess of 24 to 44 per cent. of deaths. Reference will be made to these statistics later.

In an article written by Dr. William Farr, over thirty years ago, he stated that the mean annual death rates of infants under one year in some of the principal countries of Europe were as follows: Out of one thousand infants there died yearly in Sweden 141.8; in Denmark, 137.5; in England, 182.6; in France, 223.2; in the Netherlands, 237.5; in Spain, 249.6; in Italy, 273.3.

The annual death rates in one thousand children under five years, according to the same authority, were: In Norway, 40.9; in Sweden, 51.4; in Denmark, 52.7; in England, 67.6; in Belgium, 74.9; in France, 79.2; in Prussia, 82.4; in Holland, 91.2; in Austria, 104.0; in Spain, 111.7; in Italy, 113.5.

A. Brothers, B.S.M.D., in his article on "Infantile Mortality During Child-Birth, and Its Prevention," in 1896, states that in the four years, 1889 to 1892, the total number of births in New York City was 173,126, and that during this period of four years 16,888 children born at term have died within the age of one month. Ten per cent. of the children, therefore, are lost before they reach the age of one month.

Collective statistics from sixteen European cities embracing 1,439,056 children show that 10 per cent. of those born alive die within the first four weeks of life. Eröss' statistics show that the greatest number of deaths occurred on the first day of life, and that the deaths diminish day by day. According to Eröss, 54.24 per cent. of the deaths among children within four weeks after birth are due to congenital debility.

William Moore, in a paper read before the Dublin Obstetrical Society in 1859, states that the proportion of deaths throughout England, under all ordinary conditions of life, is believed to be one in six within the first year. To parallel this proportion of mortality, we must pass on to those dying between the eightieth and eighty-fifth years of life.

Dr. D. Meredith Reese, of New York, reported at the meeting of the American Medical Association in May, 1857, that nearly 50 per cent. of the total deaths in large cities occurred in children under five years of age. In New York City in the fifty years, 1804 to 1853, the whole mortality was 363,242, including still-births, and during this period 176,043 children under the age of five years died, nearly 49 per cent. of the entire number of deaths.

M. Bertillon stated before the Academy of Medicine of Paris that in a period of ten years there have been in France 9,700,000 births; of those born 1,500,000 died within the first year of life.

J. Maule Sutton, M.D., of London, in 1872, drew attention to the influence exerted on infant mortality by the social status of the parents. His figures give a mortality of 77 per thousand for children under one year of age in urban population; and a lower percentage for rural population. These same districts, excluding the upper-class births, gave a mortality of 158 per

thousand. He studied the infant mortality among the children of the farmers of Devonshire and Norfolk, two agricultural counties. The infant mortality was 95 per thousand in the farming class; the rate among the children whose parents were not farmers was 130 per thousand.

John S. Parry, M.D., of Philadelphia, in 1871, quotes Dr. A. Jacobi as saying that "of 100 infants born alive to the gentry of England (1844) there died 20; to the working classes, 50. In the aristocratic families of Germany there died in four years 5.7 per cent.; among the poor of Berlin, 34.5 per cent. In Brussels the mortality, up to the fifth year, was 6 per cent. in the families of capitalists, 33 among tradesmen and professional people and 54 among the workingmen and domestics." Quoting De Villiers, he further writes that "the mortality among the children of the workingmen of Lyons is 35 per cent., and in well-to-do families and agricultural districts it is 10 per cent."

Dr. George Reid, in 1906, in London at the National Conference on Infant Mortality, in considering social status as an etiologic factor, divides the working class into three divisions: 1. Those among whom the proportion of employed, married and widowed females between eighteen and fifty years of age reached or exceeded 12 per cent. 2. Those among whom the proportion was 6 to 12 per cent. 3. Those among whom the proportion was below 6 per cent. The decades 1881 to 1890, 1891 to 1900, and four years 1901 to 1904 were studied. The infant mortality was always highest in group 1 and lowest in group 3. The average yearly infant mortality rates of group 1 were 195, 212 and 193; group 2, 165, 175, 156; group 3, 156, 168, 149. These statistics point out in no uncertain manner the fact that the infants of women employed in industrial and manufacturing plants during the time of their married life and motherhood are born into this world with less chance of battling with the problem of living than those whose mothers are not compelled to undergo this kind of work. The wives of farmers may and often do perform hard work, but it is done more or less out of doors, and not in the vitiated and contaminated atmosphere of a mill or factory.

Helle examined into the social status of the parents of 170 infants dying in Graz during 1903 and 1904; 112 infants who died had very poor parents; 49 children had poor parents; 9 had well-to-do parents, and no deaths occurred among the children of the rich; the percentage of the four classes being 65.9, 28.8, 5.3, 0. The general infant mortality in Graz has markedly decreased in the last twenty years, while the mortality due to gastrointestinal lesions does not show a marked diminution.

In Brün, a city of 110,000 inhabitants, the health statistics for fifteen years show that the general infant mortality during this time decreased very much, while that due to gastrointestinal lesions changed very little.

In Berlin, 1903, Newman investigated 2,701 infant deaths. Where the families were in one-room dwellings he found 1,792 deaths; in two-room dwellings, 754 deaths; in three-room dwellings, 122 deaths, and in larger dwellings, 43 deaths. It seems to be an established fact that the percentage of deaths among infants of the poor largely exceeds the mortality among the infants of the rich.

The hygienic surroundings of the infant—city or country life—are factors which play an important part in the sum total of infant mortality. In England and Wales, 77 per cent. of the whole population is urban; fifty years ago the population was equally divided between urban and rural districts. A considerable portion of this urban population lives in small towns, more closely resembling country than city life. In the year 1904, in England and Wales, 59.1 per cent. of the people lived in large towns of over 20,000 inhabitants; in 1801, only 16.7 per cent. lived in large towns.

It seems clear to me that this tendency to live more in large towns has much to do with the stationary infant mortality in England and Wales. City life means for the parents, often, long hours of work in a factory or mill; living in a small house in a small street, often poor food and not uncommonly dissipation of drink and perhaps immorality.

Epidemic diarrhea is mostly a disease of large towns and cities. It can be positively stated that geologic strata, character of soil and climate have nothing to do with infant mortality, nor is it entirely a question of poverty. Overwork, poor hygienic surroundings and poor housing seem to be two powerful factors causing infant deaths. Density of population *per se* may and does mean a good deal in causing deaths in infants. Urban England has a higher infant mortality than rural England. However, in first-class modern houses, the population may in a given area be dense, but the infant death rate may be small if other factors are present, as good hygiene, food, fresh air, healthful occupations and good social status.

If a town is distinctly industrial or manufacturing, the mortality invariably exceeds that of the town where the occupations have more of an agricultural tendency. Table 1, by Newman, shows the infant mortality in the county of Wiltshire, in which there are no large towns; it shows also that even under favorable conditions the city mortality exceeds the rural mortality; it also shows the high mortality of large towns, and the mortality of England and Wales, and rural England and Wales.

TABLE 1.—Infant Mortality Rates in Wiltshire and England and Wales, 1900-1904.

Districts.	1900.	1901.	1902.	1903.	1904.
County of Wiltshire.....	94.0	93.7	97.23	85.63	95.99
Urban Districts (Wilts.)..	95.6	106.8	93.63	89.27	100.32
Rural Districts (Wilts.)..115.7		83.8	99.89	82.76	92.52
England and Wales.....154.0		151.0	133.0	132.0	145.0
Large towns in England..172.0		168.0	145.0	144.0	160.0
Rural England and Wales..138.0		137.0	135.0	118.0	125.0

In these two countries the highest infant mortality occurs in large towns; next, in large towns and rural districts; and the lowest mortality in rural districts.

TABLE 2.

Age.	Of 100,000 infants born, the number surviving at each age.			Annual death rates per 1,000 living in each successive interval of age.		
	Three rural counties: Herts, Wilts., Dorset.	Five mining and manufacturing counties: Staffs., Leic., Lancs., W. R. Yorks, Durham.	Three selected towns: Preston, Blackburn, Leicester.	The three rural counties.	The five mining counties.	The three towns.
At birth..	100,000	100,000	100,000	213	331	382
3 months	94,820	92,051	90,874	75	154	240
6 months	93,068	88,574	85,574	61	128	180
12 months	90,283	83,081	78,197	...	...	...

Table 2, by Newman, shows the remarkable difference in infant mortality in three agricultural counties, five mining and manufacturing counties, and three towns where textile industries and mining are largely followed.

This table covers the three years, 1889 to 1891, and shows that of 100,000 infants born in the rural counties 10,000 died; in the manufacturing counties 17,000 died, and in the manufacturing towns, 22,000. An important point to notice in this table is that the town rates are most in excess of the rural rates in the later months of the first year of life, showing clearly that the congenital conditions, atrophy and immaturity can be left out of consideration, and that the continuous ill effect of town life finally kills many children that have made a strong but useless struggle against their environment. Epidemic diarrhea plays a powerful part in this sacrifice of infant life in those towns where textile industries, manufacturing and mining flourish.

The deaths occurring during the first year of life are very unevenly distributed. This applies to all countries, and all statistics that I have been able to find prove this absolutely. The greatest percentage of deaths occurs in the first three months of life, and I believe that this percentage is increasing and not decreasing. In London during the years 1839 to 1844, 24,354 infants died during the first three months of life, an infant death rate of 68 per thousand. In the same city in the years 1898 to 1903, 56,963 infants died during the first three months of life, a death rate of 72 per thousand. According to Newman, there has been, in recent years, an increased percentage of infant deaths in England and Wales during the first three months, and a slight decrease in the percentage of deaths during the last six months of the first year. Newman asserts that infants die more from immaturity at the present time and that consequently more infants begin life with less vitality than in former periods. He also states: "Children under twelve months of age die in England to-day, in spite of all our boasted progress and in spite of an immense improvement in the social and physical life of the people, as greatly as they did seventy years ago."

The report of the Registrar General of England, for 1903, shows for England and Wales, 51.4 per cent. of infant deaths in the first three months; 19.9 per cent. in the second three months, and 28.7 per cent. in the last six months of the first year of life. In the year 1904, in Berlin, 53.6 per cent. of deaths of infants under one year occurred in the first three months. These deaths are, of course, distributed over the entire calendar year, and this observation consequently is not contradicted by the fact that the greatest number of deaths occur in the hot months. Births occur in each month with fair regularity, and the congenital conditions which contribute so largely to this mortality in the first few weeks of infant existence are consequently distributed with fair regularity throughout the year.

The added deaths from gastrointestinal disease, occurring as they do in great excess in the hot months, cause the great increase in the total infant mortality for the heated term.

The outside and home employment of mothers is a factor in infant mortality that was appreciated long since, and led Sir John Simon in 1856 to state that "infants perish under the neglect and mismanagement which their mothers' occupation implies." In Dundee a large percentage of the female population, of girls and married women, work in the jute and hemp factories. The labor is unskilled, the wages small and the hours 6 a. m. to 6 p. m. These women and girls are, as a class, subnormal in weight and general physical development; many of the children are born and raised in houses containing only one or two rooms, or in large tenements, where overcrowding and, usually, uncleanliness exist. In the ten years, 1893 to 1902, the infant mortality was 176 per thousand births; in 1904, out of 174 deaths, 125 were due to prematurity and immaturity, and over 49 per cent. of the deaths occurred in the first three months of life.

In England the Factory Act of 1901 states: "An occupier of a factory or workshop shall not knowingly allow a woman or girl to be employed therein within four weeks after she has given birth to a child." This is positive legislation of a far-reaching character. If the hygienic conditions of air, light and cleanliness were only adequately controlled by law in these mills or factories, and such provisions for sanitary surroundings as are needful were insisted on, much could be done to remove the injurious influences of this class of employment. Much has already been accomplished in this direction, but much still remains to be accomplished.

In Kearsley, a town of Lancashire, of 9,500 population, the infant death rate increased from 179 per thousand in 1894-1903 to 192 in 1903, and 229 in 1904; and this is due, according to J. C. Eames, M.D., medical officer of the town, to the town having "developed into more of a manufacturing district."

In Mulhouse, Mr. Dollfus, who owned a large cotton mill, established a fund to which all the married women subscribed, and he personally contributed. Each woman subscribing received from the fund sufficient for her support during the two months following her confinement. On resuming work at the end of this two months, she was granted time at mid-day to return home and care for her baby. This procedure alone reduced the infant mortality more than 50 per cent.

In 1876 there was established in England a Society for Nursing Mothers. The object of the Society is to save the child's life by preserving the health of the mother. The mothers are cared for in institutions for several weeks before confinement, being well fed and housed; but what is more important is that, during the first year of the child's life, the mother is cared for wholly or in part, as it is necessary. A physician and nurse visit her at her house and give her the assistance she may require. Each month the child is weighed, carefully examined, and if sick is always cared for. The Society has cared for over forty thousand children, and the saving of infant life has been very great.

In Paris since 1904 the Coullet dining-rooms have gone one step ahead of anything done, as far as I know, in America. They have established restaurants in the poorer districts of Paris; any woman who is nursing a baby is given free of all cost two good meals each day. They feed the mother and the mother nurses the baby.

Since all empires are built of babies, unless a change in the trend of statistics of infant mortality shall take place, our future generations will fail to develop physically and numerically along the lines which are both normal and natural. Race suicide is not a theory, but a fact. France is actually facing slow extinction; its birth rate is smaller than that of any other European nation. The trouble and expense incident to the care and rearing of children does not appeal to all women of the present day; motherhood is not always synonymous with wifehood. A high birth rate is usually, but not invariably, linked with prosperity.

The foreign-born population of the United States has apparently a larger percentage of children than the

native population, but this excess of fecundity is probably no more than that which usually is found in urban populations in poor districts, and the high infant mortality commonly found among this foreign element more than reduces its growth to the level of native-born Americans.

The Royal Commission in New South Wales, recently appointed, after much careful study and thought, decided that the main factor in the reduction of the birth rate was: "A diminution in fecundity and fertility in recent years due to the deliberate prevention of conception and destruction of embryonic life, and to pathologic causes consequent on the means used, and the practices involved therein." The remedy for this is not easy to apply; all nations are becoming more extravagant in their methods of living—automobiles and babies may be incompatible possessions—if we have one, we must often renounce the other.

Infanticide by neglect or intention undoubtedly causes the death of many hundred infants each year. Women in the poorer walks of life should be urged to nurse their children, entirely or in part, as long as possible. Part breast and part bottle feeding is much better than all bottle feeding; weaning should never be done prematurely unless by the advice of a physician. Women with illegitimate children should be kept in the hospital and made to nurse their babies until after the third month. After this age, the child is better able to withstand the perils of artificial food, and the mother, from her association with the child, has perhaps become sufficiently fond of it to make an effort to protect its life. If a child is born, and no one is with the mother at the time of its birth, the danger of death at the time of delivery is greatly increased, and the secrecy of birth may induce the mother, under certain conditions, to destroy the child's life.

The giving of opiates to children, either in the form of paregoric or of a soothing syrup, is pernicious and should always be absolutely forbidden. Overlaying, either by accident or design, is in certain portions of this and other countries, very common; an infant, of course, should never sleep in the same bed with its mother.

Infant life insurance and burial clubs cause the death by neglect of many; statistics prove that a much greater number of children insured and in burial clubs die than of those children in the same cities and towns living under exactly similar conditions. Coroners' inquests should be rigid and impartial, and if there is any question or possibility of infanticide, the case should be thoroughly investigated and proper punishment imposed on the guilty. Of 864 children dying under one week of age in Philadelphia, inquests showed, according to Parry, that 210 died from "unknown causes," 293 from "asphyxia," 94 "still-born," 62 from "exposure and neglect" and 22 from "want of medical attention." In these cases the coroner's physician believed that the majority of those which he examined were murdered.

The death rate per thousand is well known to be much higher among illegitimate than among legitimate children. An interesting fact, which is perhaps not always appreciated, is that in large cities the death rate among illegitimate infants is much greater than in country districts. In Glasgow in 1873 the death rate for illegitimate infants was 293 per thousand; for legitimate infants, 154 per thousand. In London in 1902 the death rate of illegitimate children was almost twice as great as the death rate of legitimate children. The infant death rate of London, as a whole, exceeds the rural infant death rate by about 20 per cent. The deaths among illegitimate infants in London exceeds the rural death rate among illegitimate infants by over 50 per cent.

According to Dr. Norman Kerr, in 1894 the proportion of female inebriety in England had increased greatly in the recent years preceding 1894. He asserts that prison experience shows a distinct increase of drinking to excess among women. According to the annual death rates from alcoholism in England and Wales, per million living, from the year 1875 to 1904, the mortality due to inebriety is distinctly increasing. The average for every five years from 1875 to 1904 was: 1875 to 1879, 25 deaths per million living; 1880 to 1884, 29 deaths per million; 1885 to 1889, 36 deaths; 1890 to 1894, 50 deaths; 1895 to 1899, 58 deaths; 1900 to 1904, 71 deaths. In studying these figures it seems as if there can be no reasonable doubt that alcoholism is increasing among the women of England and Wales, although some allowance should probably be made for the more accurate diagnosis of recent years. Dr. Scott, quoted by Newman, believes that alcoholism is increasing among the women of Scotland.

Alcohol is a distinct poison to children, but the number of deaths caused by the giving of alcohol direct in any form to children is certainly very small in the United States. It has, however, been clearly shown that suffocation in bed and overlaying is twice as common on Saturday as any other night in the week; and the prevalence of drinking among the poor on that night is proverbial. An alcoholic mother rarely supplies her baby with a good breast-milk, and what is perhaps more important is the fact that the milk from such a mother may even contain alcohol. Alcoholism among women is perhaps increasing in America, but it is surely less common than in England.

Systematic nursing and medical care are wonderful aids in the prevention of infant mortality, and account largely for the difference between the infant mortality of the rich and poor. Home treatment, or perhaps better say maltreatment, of very young infants often destroys what little chance of life the infant would otherwise have had. The poor and ignorant classes often call "the doctor" too late to save the patient.

It is not an easy task to form an accurate idea of how many or what proportion of infant deaths are due to congenital causes and those diseases which, if not actually congenital, still leave the child more susceptible to their development than is the child whose parents are free from such diseases. Herbert M. Rich, in 6,866 deaths under one year of age, found 23.2 per cent. to be due to malformations, congenital debility and premature birth. Syphilis is certainly responsible for many premature and early deaths. In London and in most English cities the mortality from prematurity and atrophy is about 45 per thousand, these deaths almost all occurring in the first three months of life. Smallpox, malaria, typhoid fever and tuberculosis are all diseases that may and do exert an influence on the infant. Lead, mercury and phosphorus may exert a distinct antenatal effect, and the influence of alcohol has already been alluded to. In fact, any and all toxemias may influence the child during intrauterine life.

Gastrointestinal diseases are not only the most common diseases of infancy and childhood, but they are also responsible for more deaths than any other class of

diseases. Infantile diarrhea is especially apt to occur in the first year of life, although very common in children under two years of age. Hot weather, bad feeding and poor hygiene are the chief etiologic factors. It is often seen in epidemics, is very dangerous, and is the common cause of deaths among infants in cities in summer. Epidemics have often been traced to infected milk, although one must remember that milk may be infected at the farm, in transit or by the consumer.

Cases of this disease are rare among the rich, compared to the number one sees among the poor; they are rare in the country, compared with the number seen in the cities. The diarrheal death rate is, as a rule, highest in those countries where the infant mortality is greatest. Russia has the highest infant death rate of any European country, and Germany ranks second in the percentage of infant deaths. Taking 42 of the largest German cities, in the years 1904-5-6, there occurred 67,633 deaths of infants under one year of age; of these 28,422 were due to gastrointestinal disease.

In certain American cities it has recently been clearly proved in many instances that this enormous summer death rate, due to the diarrheal diseases, can be reduced. Clean milk must be provided for the poor at a nominal cost, and this milk must be properly modified for children of different ages and conditions. A campaign of education among the mothers of this poor class must be carried on persistently and continuously; visiting nurses must be supplied; and fresh air and improved hygiene must be insisted on. It is not asserting too much to say that a reduction of 50 per cent. in summer infant mortality may be accomplished by these means.

It is an old truth thoroughly appreciated by American physicians that breast-fed infants do well, whether they belong to the rich or the poor, but I do not believe that it is appreciated how great a difference exists in the infant mortality between breast-fed and bottle-fed infants. In the year 1903, 4,075 infants died in Munich; of these 83 per cent. were artificially fed. In Berlin since 1885 the census gives the character of the feeding of all living children. Taking the five years, 1900 to 1904, only 9 per cent. of the deaths occurred in breast-fed babies, and Budin has shown that only about 9.5 per cent. of the infant mortality in Paris occurs in breast-fed children. Of course, breast feeding is usually associated with other favorable factors, and bottle feeding often combined with many unfavorable associated conditions, but the figures are truly startling.

In war times the infant mortality often declines in manufacturing centers, in spite of the fact that the general mortality rate increases. During the siege of Paris, 1870-71, it is claimed the general mortality rate doubled, yet the infant mortality rate declined 40 per cent. Under such conditions infants do not die, and why? In times of war or great industrial depression the poor woman, having no work, stays at home and nurses her baby, and the child lives. In prosperity she works all day, gives her baby the bottle, and it dies.

It is both interesting and instructive to note that any considerable variation in the infant death rate in any locality is almost invariably linked with a corresponding change in the diarrheal death rate, the mortality from other causes changing, as a rule, comparatively little.

The factors contributing to infant mortality are so many and varied and the difficulties in controlling these harmful influences are so great that at the present day one is forced to admit that, while the preventable death rate is very large, still among the poor there must be a large necessary death rate.

Several years ago the mayor of Huddersfield, England, offered a gift of $5 to every child born in his town that lived to the age of twelve months. All classes, rich and poor, were included; the mortality in the Huddersfield district was immediately reduced more than 50 per cent.

In Yonkers, N. Y., a campaign was undertaken in 1894, having as its object the reduction of the infant mortality rate. The physicians of Yonkers, aided by the public press, established milk stations, and instituted and carried out a campaign of education among mothers. A sanitary inspection of the tenement district was adopted and nurses were appointed to visit the sick. The Board of Health also passed a regulation requiring in all new tenements a sufficient amount of light and air. The deaths from digestive diseases were reduced more than 50 per cent. Dr. S. E. Getty believes that, of all the means employed, the most important was the establishment of the milk dispensaries.

That a general propaganda against infant mortality has been vigorously pushed all over the United States is shown by the census, 1880 and 1890. In 1880 the general infant mortality of the United States was 246 per thousand; in 1890 it had fallen to 159 per thousand, and during the same period it is gratifying to note that the infant mortality in cities decreased from 303 to 181 per thousand. This is surely a record to be proud of.

In France, 1874 to 1893, the average infant mortality was 167 per thousand. Ten years later, in 1903, it was only 137 per thousand. In Paris it was only 101; wonderful Paris has the smallest birth rate and the lowest death rate of any large European city.

The physicians of the United States have accomplished much in the last ten years, and yet when we consider how remarkably successful have been the efforts directed to save infant life, should we not, as the representative body of the American profession, feel chagrined that we have not accomplished more? Certainly 50 per cent. of all infant deaths at the present day are preventable.

Hospitals for infants have been established all over the world, and we are establishing new ones almost daily, and yet some physicians question whether they do good or harm. Going back to the year 1871, we find that 29.82 per cent. of all the children born in Philadelphia died before the end of their first year. In the same year, in the foundling ward of the Philadelphia Hospital, 73.65 per cent. died. The death rate among the foundlings was 43.83 per cent. more than among infants of the same age of Philadelphia. These children were, as a rule, in fair health on entering the hospital. Of these infants, 74.69 per cent. died from diarrheal diseases, and only 25.31 per cent. from all other causes. At this period, the records of the foundlings' ward in the Philadelphia Hospital were about the same as the records from the foundling hospitals in other large American cities. Dr. A. Jacobi, at this date, had the courage to point out publicly the enormous mortality in the foundling institutions of New York, and as a consequence was asked to resign from the hospital staff.

What is the condition in our infant hospitals at the present day? My personal opinion is that in the modern infant hospital, where the air space is ample, and the windows are kept open day and night; where the milk is the best and the milk-room thoroughly up to

date; where the ratio of nurses to patients is not less than one to five; where the sick are promptly isolated from the well, and "mothering" is understood—that in such a hospital the physician is an optimist and not a pessimist.

Many of the infants will die, but most of them will live. If one considers that many of those who die are "weaklings" on admission, and that the greatest proportion of deaths occurs in the first three months of life, one is apt to believe that the best of the modern infant hospitals are worthy institutions and should be supported. Much depends on the character of the feeding, but here as ever, the truth that breast feeding is better than bottle feeding is well exemplified.

Of 300 infants admitted to the Dresden Children's Polyclinic in 1900 to 1901, there were 53 deaths. All the deaths, 53 in number, were among the bottle-fed babies. Among 93 breast-fed babies, during the same period, in the same hospital, there was not a death. Breast-feeding is surely a powerful measure with which to combat death.

According to the census of 1900, the infant mortality per 1,000 in the United States was in those states where registration was in force:

	Per 1,000 births.
District of Columbia	274.5
Rhode Island	197.9
Massachusetts	177.8
New York	159.8
Connecticut	156.8
Maine	144.1
New Hampshire	172.0
New Jersey	167.4
Vermont	122.1
Michigan	121.3

The census of 1900 shows the returns for infant mortality from many cities and towns of the United States. The infant mortality in some of these cities is very high, over 400 per 1,000 in Charleston, S. C. A number of them show a mortality over 300, and over 100 cities exhibited an infant mortality above 175 per 1,000.

The important point to be decided is as to the influence which has been exerted on this infant death rate in recent years. Have we been able to reduce in any appreciable degree this great and unnecessary waste of infant life? A careful study will show that a great saving of life has been accomplished in recent years, and much will surely be accomplished in the future.

In 1903 the infant mortality of France was 137. In the previous twenty years it was 167, and yet this death rate ought to be still more greatly reduced, for we know that Ireland has an infant death rate below 100. Norway in 1902 had an infant death rate of 75, and Sweden 107 per 1,000.

Of all European countries, Russia has the highest infant death rate, 270 per 1,000. Germany has the next highest mortality, averaging in recent years a little over 200. Medical science and skill have reached a very high plane in both these countries, and infant mortality has been greatly reduced during the last thirty years. It is to be hoped that the useless waste of life in these two countries will quickly be much more distinctly diminished, and it is believed they will soon show as great a reduction as has occurred in France.

There has been a great decrease in the proportion of infants dying under one year of age in the United States during the last twenty years. The infant mortality for the United States in 1880 was 246 per 1,000; in 1890 it had fallen to 159 per 1,000. During the same period the mortality in the cities of the United States fell from 303 to 184 per 1,000. In New York City in 1891, the death rate in children under 5 years of age was 96.6 per 1,000; in 1896 it had fallen to 77.5 per 1,000, and in 1900 the mortality under 5 years of age was only 67 per 1,000.

Many figures might be quoted showing that in recent years infant mortality has distinctly lessened. In London in January, 1908, the deaths of infants under 1 year of age to 1,000 births, was 115. According to George B. Mangold, U. S. Department of Commerce and Labor, the infant mortality in New York City in 1891 was 241.9 per 1,000; in 1900 it was 191.7 per 1,000; and in 1906 it was 167.8 per 1,000. The mortality has gradually declined. In New York City the death rate of children under 5 years of age was 96 per 1,000 in 1891; in 1904, it was 54 per 1,000. In the same community the deaths from measles, scarlet fever and diphtheria have become distinctly less; and diarrheal diseases in small children have decreased 62 per cent. since 1881.

School nurses are now provided and medical inspection of schools is now well recognized and practiced in many of our large cities. According to Dr. W. M. L. Coplin: "A necessity for medical attention was detected in 27,481 children in the schools of Philadelphia in 1905, and 31,544 children in 1906." Dr. A. C. Abbott, chief of the bureau of health of Philadelphia, shows that in the years 1903-5 a distinct decrease in the infant death rate occurred. Philadelphia shows a very decided decrease in infant mortality since 1897.

Thomas A. Buckland, city chemist for St. Louis, states that there has been a decrease in infantile mortality since 1904. W. Ernest Wende, M.D., health commissioner of Buffalo, states that infant mortality is decreasing in that city. Samuel E. Allen, health officer of Cincinnati, states the proportion of deaths of children under 2 years of age to the total mortality has decreased considerably since 1886. In the year 1886 it was 32.56 per cent.; in the year 1906 it had decreased to 21.92 per cent.

Milwaukee and Minneapolis and the nine largest cities in the State of New York, according to George W. Goler, M.D., show a decrease in infant mortality.

The following have occurred to me as being important factors in lessening infant mortality:

Abatement of nuisances.
Milk inspection; milk dispensaries; visiting nurses.
Free antitoxin.
Improved sanitation.
Good food.
Education of girls and married women in the duties and requirements of motherhood.
Maternity fund in all industrial establishments where married women are employed.
Care of poor pregnant women before and after confinement.
Laws carefully protecting all children who are cared for by private individuals, apart from their parents; rigid enforcement of these laws.
Elementary principles of hygiene taught in all schools, public and private.
Nursing of all babies as far as possible, by their mothers.
Sending children to the country in summer.
Pasteurizing milk during the hot months.
Farming out, under proper medical supervision, of foundlings and institution infants, and the appointment of nurses to visit these infants regularly.

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DEVELOPMENTAL DEFORMITIES OF THE CRYSTALLINE LENS.*

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In the observation brought forward in this paper I propose to show how several forms of congenital cataract are the outcome of arrests of development in the lens at different stages in its formation.

I am, naturally, aware that to attribute a condition to an arrest of development offers only a partial explanation of its etiology, leaving the cause of the arrest still to be accounted for. I think, however, I shall be able to demonstrate that a recognition of the stage at which the arrest of development has taken place, though we do not know the actual cause of the arrest, helps to a clearer insight as to the meaning of the appearances presented by congenital cataracts, and also affords valuable hints as to the most suitable operative measures to employ in their treatment.

For descriptive purposes I propose to summarize the development of the lens into the three following stages, and then to point out how certain arrests of development occur during each stage:

1. The down growth of a fold of cuticular epiblast, which is separated in the form of a hollow vesicle from the rest of the surface epiblast by intruding mesoblast, and becomes surrounded by a hyaline capsule.

2. The lengthening out of the cells composing the posterior layer of the vesicle until they fill its entire cavity. These are the first formed lens fibers and exist as the most central part of the fully developed lens.

3. The proliferation of the cells lining the anterior capsule and their transformation at the sides of the lens into lens fibers. A transformation which is effected by their lengthening out anteriorly and posteriorly, so as to encircle the fibers developed from the posterior layer, lines of sutures resulting where their ends come in contact. This laying on of fresh fibers laterally goes on throughout life, but its rapidity is lessened as life advances by the increasing intracapsular tension tending to check the proliferative activity of the cells.

1. The arrests of development which I have to describe during the first stages have mainly to do with the capsule of the lens.

The hyaline capsule of the lens was at one time regarded as a structure of mesoblastic origin and the product of the fibro-vascular sheath which encircles the lens in fetal life. There is, however, considerable evidence to show that it is really epiblastic in origin and formed as a kind of secretion from the epithelial cells lining it.

This evidence may be considered as embryologic, anatomic, chemical, experimental and pathologic.

Kölliker and Kessler pointed out that the capsule is present before the fibro-vascular sheath makes its appearance. We find also that the anterior and lateral parts of the capsule continue to grow and thicken with age, long after the vascular sheath has disappeared.

The anterior and lateral parts which are lined by epithelial cells throughout life are markedly thicker than the posterior, which is only lined by cells for a short time during early fetal life. The anterior capsule in the adult lens has been estimated as 0.016 mm. in thickness and the posterior as 0.008 mm.

Though classed as an elastic membrane, it is found not to resemble yellow elastic tissue of undoubted mesoblastic origin, either in its chemical composition or in its staining reactions. In these particulars it has close affinity to the basement membranes of glands, which it is very probable are also the product of epithelial cells.

Schirmer[1] has shown that after experimental wounds of the anterior capsule the gap first becomes closed by some rows of cells resulting from proliferation of the capsular epithelium beneath a layer of fibrin. Later a new hyaline layer makes its appearance across the space left by the retraction of the two extremities of the wounded capsule. This new hyaline layer is evidently the product of the epithelial cells on its inner surface and is formed quite independently of any cells of mesoblastic origin.

In connection with anterior polar cataracts new formations of a layer of hyaline capsule are sometimes met with beneath the opacity. A study of sections from a series of lenses with this form of cataract, which vary in the length of time which has elapsed since its formation, clearly establishes the epithelial origin of these new hyaline layers.

Anterior polar cataract most frequently occurs as a sequel of ulceration of the cornea in infancy; it may, however, be congenital. I have examined anatomically a lens with this form of opacity from an eye with congenital aniridia, in which the cornea was perfectly clear and healthy and had never been inflamed or ulcerated. In this specimen the microscopic appearances of the affected area were precisely similar to those seen in anterior polar cataracts resulting from corneal ulceration.

I have published[2] a description of the histologic appearances of anterior polar cataract in six eyes in which the time which had elapsed from the formation of the opacity to that at which the eye was excised ranged from six weeks to twenty-one years.

In two, in which the opacity was of only six weeks and eight weeks formation, respectively, the changes found consisted in some disintegration of the lens fibers at the anterior pole and proliferation of the cells lining the anterior capsule in that situation. As to which is the primary of these two processes there has been much discussion.

The one theory holds that the primary factor is the proliferation of capsule cells, excited into an excess of activity by the neighboring inflammatory condition of the cornea. It affords, however, no explanation of the occurrence of congenital anterior polar cataract, which, as I have already pointed out, may be present in an eye where there was no history of any inflammation having occurred, and where, after the most careful microscopic examination, not the least trace of any past inflammatory trouble can be detected.

The other theory, in support of which I have myself published some observations,[3] assumes the disintegra-

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. For lack of space part of the article is omitted. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the reprint will be sent by THE JOURNAL of the American Medical Association on receipt of a two cent postage stamp.

1. Arch. f. Ophth., xxxv, 220.
2. Tr. Ophth. Soc. U. K., xii, 89.
3. Tr. Ophth. Soc. U. K., xviii, 124.

tion of the lens fibers to be the first change. This disintegration apparently results from a localized disturbance in nutrition due to contact of the lens at its most prominent part, the anterior pole, with the inflamed and swollen cornea. In an infant's eye, with its exceedingly shallow anterior chamber and very globular lens, such contact is easily affected. The disintegration thus brought about in the lens substance causes a lowering in the intracapsular pressure in the affected area, so removing the restraining influence which the intracapsular pressure exerts on the proliferating activity of the capsular epithelium and allowing of its irregular multiplication.

The fact that similar changes in the lens are excited by contact with it of a sarcomatous growth of the ciliary body favors this theory. The congenital anterior polar cataracts can be accounted for in accordance with it by imagining the apposition of the lens and cornea, which normally exists for a part of fetal life, to have been abnormally prolonged after the disappearance of the fibrovascular sheath which supplies the lens with nutriment in its early stages.

The mass of proliferated capsular epithelium, which is at first met with in an anterior polar cataract, gradually becomes converted into a condensed mass of tissue showing only a slight lamination and studded here and there with a few flattened elongated epithelial cells which have retained their nuclei. Beneath such a mass epithelial cells, continuous with those lining the capsule in the unaffected parts, gradually insinuate themselves, separating it off from the adjacent lens substance. In an anterior polar cataract of seven months formation I found a continuous layer of such cells on the posterior surface of the laminated mass, at the margins of which the hyaline capsule and its lining epithelium appeared to part company, the former passing in front and the latter behind.

In the course of time, in front of the epithelial cells which pass behind the laminated mass, a hyaline layer, similar in all respects to the lens capsule, makes its appearance. In an anterior polar cataract of eleven years formation I found the laminated mass contained between two unbroken layers of hyaline capsule, both of which were continuous with the capsule in the unaffected region at the sides, the posterior of the two being alone lined by epithelium. That this new hyaline layer of capsule is the product of the epithelial cells which have crept in beneath the laminated mass seems to me an irresistible conclusion.

Anterior polar cataract occurs most frequently in infancy long before the lens has attained its maximum dimensions and density. As age advances new lens fibers are laid on laterally, which, extending backward and forward, separate what were for a time the most peripheral fibers away from the capsule. As already stated, in anterior polar cataract, besides the proliferation of the capsule cells, there is some degeneration of the lens fibers. These are at the extreme periphery of the lens at the time the degeneration takes place; as new lens fibers are developed the disintegrated area and the laminated mass formed from the proliferated cells gradually become separated by them, so that in an anterior polar cataract of long duration two opacities are often seen, the one at the surface of the lens, the outcome of the proliferated epithelium, and the other some little depth down, due to degenerated lens fibers.

In some of the cases seen clinically with two opacities the separation has not been complete, a thin band cementing them together, so that they presented much the appearance of a collar stud. Presumably in such cases the apposition of the ends of the lens fibers which have grown forward from the sides has not been completely effected, some granular material having remained interposed in the line of suture.

Taking it now that the evidence brought forward suffices to show that the lens capsule is the product of the epithelial cells lining it, it is obvious that the posterior part of the capsule has only a very short time in which it can be formed, for the cells which compose the posterior layer of the lens vesicle soon lengthen out into lens fibers, and then become separated from the lens capsule by the growth around them of the new lens fibers laid on laterally, the posterior capsule for the remainder of life being devoid of any cellular lining. Under these circumstances it is not surprising that defects in the development of the central part of the posterior capsule should occasionally be met with, causing it to be unduly thin or absent altogether.

Several cases have now been recorded in which a congenital gap in the posterior capsule of the lens has been found. The first of the sort so far as I am aware was in a specimen which I described and pictured in 1892.[4]

Two cases, in some respects very similar to this, were described by Parsons in 1902,[5] and he has kindly allowed me to have drawings made from his sections of them.

Having from these cases become aware of the not uncommon association of these defects, I was led to reexamine sections which I had previously prepared with persistent hyaloid artery and atypical development of the vitreous. I found that in those in which I had sections passing across the center of the posterior pole of the lens a gap in the posterior capsule was present. In those in which I had only sections passing through the side of the lens there was some rucking of the posterior capsule suggestive of the possible presence of a defect in the center.

So frequent is a congenital formation of the fibrous tissue in the vitreous met with in association with a defect in the posterior capsule of the lens that I am inclined to think that the latter is the primary condition and the former a kind of compensatory change.

These cases with a congenital defect in the posterior capsule of the lens with fibrocellular atypical vitreous filling the gap or extending forward into the lens substance are not only of considerable pathologic and embryologic interest but also of clinical importance.

In the first case I have mentioned, though clinically a gray reflex was seen at the back of the lens, the lens itself appeared clear. Except for some cortical opacities the same was true of the second case. Microscopic examination of the lenses in both these cases, however, showed extensive changes, which could not be entirely accounted for by the hardening reagents. Both these eyes were removed very early in life, at 9 months and 10 weeks, respectively. I think there can be little doubt that if they had been left some months longer the whole lens in each case would have become opaque.

I have recorded a case[6] in which presumably there was a similar condition behind the lens where such a change was observed to take place.

4. Roy. London Ophth. Hosp. Rep., xiii, 363.
5. Tr. Ophth. Soc. U. K., xxii, 253, 258.
6. Roy. London Ophth. Hosp. Rep. xiii, 365.

In these cases, if the lens substance in front of the atypically developed vitreous became opaque before birth, or if the patient was not presented for examination until it had become opaque, the condition would be diagnosed as one of complete congenital cataract.

If a discission operation was performed some lens matter might be liberated, exposed to the action of the aqueous and become absorbed; but the fibro-cellular tissue at the back would be unaffected by the operation and would remain as a dense opaque membrane which it would be found very difficult to tear or cut with a needle. If its removal was attempted by traction with a pair of forceps, vitreous would be certainly drawn forward with it, and some would probably escape, seeing that the membrane is attached to and really part of the vitreous. If it were to be incised with a pair of iridotomy scissors the gap formed would remain as a simple linear incision and show no tendency to gape, the membrane being such a tough and inelastic structure.

All those who have had experience of operative procedures on congenital cataracts will recognize, in the above, happenings with which they are familiar.

In two cases, shown to me by my friend, Mr. G. W. Thompson, where a tough membrane which could not be torn with a needle was encountered in connection with congenital cataract, the opaque tissue had ultimately been displaced downward out of the central part of the pupillary area. A good clear opening in the line of vision had been thus obtained through which the patient could see, and through which a clear ophthalmoscopic view of the fundus could be obtained. In both these cases a slender fibrous cord was detected passing forward through the vitreous from the center of the optic disc to the back of the displaced opaque membrane, evidently the remains of a central hyaloid artery.

These two cases afford confirmatory evidence that the tough resistent membranes met with in congenital cataracts are frequently due to a malformation of the anterior part of the vitreous. They also, I think, serve to indicate the way in which such cases had best be dealt with. In them a very satisfactory operative result had been obtained by the somewhat accidental displacement downward of the opaque tissue. I would advocate that such displacement, or couching, of the tough membrane should be deliberately carried out. I think in most cases of congenital cataract it is first desirable to perform a needling in the usual way; it serves as an exploratory procedure enabling the operator to judge the consistency of the tissue with which he has to deal; it exposes to the solvent action of the aqueous humor whatever lens matter there may be present. If, as the result of the preliminary needling operation, it is found that there is a tough substance in the pupillary area which is not an anterior polar cataract, then as a subsequent procedure I would suggest that the operation for its displacement should be performed.

In some of the cases I have mentioned with a congenital gap in the posterior capsule of the lens there has been an extension forward of mesoblastic fibrocellular tissue into the lens.

I now come to a class of cases in which through a gap in the posterior capsule of the lens there was a protrusion backward of the lens substance into the vitreous; a class of cases which are known as posterior lenticonus.

For our knowledge of the anatomic changes in posterior lenticonus we are largely indebted to Carl Hess. An excellent little monograph, recording some fresh cases and summarizing the literature of the subject, was published by André Patry.[7]

The views put forward as to the cause of posterior lenticonus are classed by Patry under two headings:

1. The rupture of the posterior capsule (as he terms it) is due to an increased size of the lens.
2. The rupture and deformity of the lens are both due to traction produced by the hyaloid artery.

Through the kindness of my friend, Mr. Mayou, I have had the opportunity of examining the sections of two microphthalmic eyes[8] showing posterior lenticonus.

Neither of the two theories already referred to adequately explain the causation of posterior lenticonus when all the recorded cases are considered together, and I would suggest that a better explanation is to be found in regarding the gap in the posterior capsule as a defect in development rather than a rupture. The fact that Hess[9] has found and pictured the condition in a chicken embryo 150 hours old is, I think, strongly in support of this view. As I have pointed out, the development of the capsule at the posterior pole has to be completed exceedingly early and should it fail to form there is no means in later life by which the defect can be made good.

The gradual growth of the lens would cause such a gap to expand, and if not too much blocked up by fibrous tissue formation in the anterior part of the vitreous the lens fibers at the posterior pole would protrude through it, forming the conical projections which are met with.

In some cases the faulty development appears not to result in a complete absence of the capsule at the posterior pole, only producing an undue thinness and weakness, which on growth of the lens results in a bulging outward in that region.

Of the backward displacement of the nucleus of the lens, which is met with in these cases of posterior lenticonus, I shall have more to say later on.

The points which I have endeavored to bring out in the foregoing observations on the development of the lens capsule may be summarized as follows:

A. The lens capsule is the product of the epithelial cells lining it.

B. The time during which the posterior capsule of the lens has to complete its development is exceedingly short as the cells forming the posterior layer of the lens vesicle soon lengthen out into lens fibers and become separated from the capsule.

C. Congenital gaps in the posterior capsule are met with which are bridged across by fibrous tissue formation in the anterior part of the vitreous.

D. This fibrous tissue formation in the vitreous, which sometimes contains blood vessels from the central hyaloid artery may extend through the gap in the posterior capsule. An admixture of mesoblastic and epiblastic tissue within the lens capsule resulting.

E. This fibrous tissue formation at the back of, or within the lens capsule, accounts for those cases of exceedingly tough, shrunken, congenital cataracts which show little tendency to absorb after discission.

7. Sur l'histologie et l'étiologie du lenticône postérieur, Genève, 1906.
8. Reported in Tr. Ophth. Soc. U. K., xxiv, 340.
9. Pathologie und Therapie des Lensensystems. Handbuch der Gesamten Augenheilkunde, vi, 201.

F. The protrusion of lens substance through a congenital gap in the posterior capsule, or the bulging of a congenitally thin posterior capsule, offers the best explanation of cases of congenital posterior lenticonus.

2. Passing now to defects occurring during the second of the three stages into which I split up the development of the lens: that in which the nuclear fibers are formed from the cells lining the posterior part of the lens vesicle.

Before the lens vesicle has become completely closed anteriorly the cells which come to form its posterior layer show signs of elongation. After the vesicle is complete the elongation progresses, continues until its whole cavity is filled by these cells transformed into lens fibers. These lens fibers later become surrounded by others laid on at the sides and form the nucleus of the lens.

If the cells forming the posterior layer of the lens vesicle for some reason failed to lengthen out into lens fibers, then no nucleus of the lens would be formed and the laterally developed lens fibers would have nothing to encircle.

I wish to point out that there is a form of congenital cataract in which the pathologic appearances are best explained by considering such an arrest of development in the nucleus to have taken place.

The clinical appearances of these cataracts are, I think, such as allow of them being differentiated from other forms of congenital cataract, and the recognition of their nature is of some practical utility in their treatment by operative measures.

The condition is one which has been spoken of as disc-shaped cataract and four cases have been published in which anatomic examinations have been made. The first by Becker[10] in 1883, one by Vossius[11] in 1893, one by myself[3] in 1898, and the other by Hess[12] in 1905.

The appearance of the lenses in anteroposterior section has been figured in the three last, a comparison of the three figures and the descriptions given show that they presented the same chief characteristics. These are as follows: Flattening of the lens anteroposteriorly, most in the center; so that in a section a rounded mass is seen on each side connected by a band, an appearance comparable to that of a dumb-bell. In the central flattest part of the lens, a laminated mass of tissue is situated, similar to that met with in anterior polar cataract; it extends backward from the anterior to the posterior capsule, no lens substance intervening. In the rounded parts at either side of the central laminated mass there is lens substance, showing a variable amount of disturbance in the vicinity of the central part, and becoming more normal and regular in its arrangement toward the periphery.

Evidently in these lenses there is an entire absence of the nucleus. Its failure in development does not seem, however, to have checked the activity of the cells lining the anterior and lateral parts of the capsule. The laminated mass in the center is, as I have said, precisely similar in appearance to the laminated masses met with at the anterior pole of the lens in anterior polar cataract. These, as I have shown in the early part of this paper, result from the proliferation of the cells lining the anterior capsule, as the outcome probably of a decrease of the intracapsular pressure in their vicinity. In these lenses, in which the nucleus fails to develop, there would likewise be an abnormally low intracapsular pressure in the neighborhood of the anterior pole of the lens, and so the formation of a large anterior polar cataract is what might be expected.

The activity of the cells lining the sides of the capsule not being interfered with, a formation of the laterally developed lens fibers has taken place. These having no nucleus around which to group themselves have formed accumulations at the sides of the anterior polar mass, with irregularities and vacuolations of varying distribution.

I have seen several congenital cataracts clinically which I think there can be little doubt belonged to this class. In some the results of operation tended to confirm the diagnosis.

The appearances which seem to be characteristic of this condition are: The presence of a dense, circular, central white opacity, which, while extending to the anterior capsule, is at a distinctly deeper level than that of the surface of the iris at the pupillary margin; some irregular grayer opacity in the immediate vicinity of the central white patch, in which the latter appears to be set. With an undilated pupil this central opacity may fill the whole of its area and appear to be a much shrunken opaque lens. If, however, a sufficient dilatation of the pupil can be obtained, a peripheral clear area is discovered. If an iridectomy is performed, the edge of the lens will become visible, but it will be seen not to present its normal rotundity, appearing too thin from before backward.

When a discission operation is performed on these cataracts with a little maneuvring the white central opaque part can be separated from the rest of the lens, and will then probably drop down into the lower part of the anterior chamber, where it may remain for an indefinite time, showing no tendency to become absorbed or giving rise to any irritation. When the dense white patch has been picked off in this way a central black opening is left, as can be easily understood from a study of the anatomy of these cataracts. After discission a small amount of lens matter usually becomes liberated and absorbed, but comparatively only a very small amount to what is so affected in other cataracts.

In this class of congenital cataracts, most satisfactory results are to be produced by needling operations, especially if the nature of the condition which is being dealt with is recognized. One or two discissions usually suffice to allow of good vision.

In a child of 18 months with this form of cataract whom I operated on in January, 1906, I succeeded in each eye in tearing away the central dense white plaque which appeared to have calcareous matter in it. In each eye it has fallen into the lower part of the anterior chamber and remained there since. After its separation a good central opening through which a clear view of the fundus could be obtained was left.

3. My third stage in the development of the lens is concerned with the formation of the laterally developed lens fibers which surround the nucleus.

In the last class of cases dealt with, some dystrophic influence, acting on the lens vesicle exceedingly early in fetal life, resulted in the failure in formation of the lens fibers which develop from the cells of the posterior layer of the vesicle, but had not prevented the next stage in the formation of the lens, viz., the development of

10. Zur Anatomie der gesunden und kranken Linsen, Wiesbaden, 1883.
11. Beitr. z. Augenh., ix.
12. Handbuch der gesamten Augenheilkunde, vi, 145.

lens fibers laterally from the cells at the sides of the capsule.

It is easy to imagine the exact reverse of this taking place, i. e., a normal, or comparatively normal, development of the lens fibers from cells forming the posterior layer of the vesicle, and the occurrence of some dystrophic influence later, interfering with the development of the laterally formed lens fibers.

Such an occurrence, I would suggest, offers an adequate explanation for another variety of congenital cataract which is met with, also presenting distinctive clinical characteristics. It is that form of congenital cataract in which a small nucleus, comparatively well formed, is met with in a capsule distended with opaque milky fluid, which latter has resulted from the proliferative activity of the cells at the sides of the capsule instead of lens fibers.

Clinically this form of congenital cataract presents the appearances of a Morgagnian cataract of late life. It has a characteristic milky white, homogeneous color, and sometimes shows chalk white specks on the surface.

I have operated on several congenital cataracts of this description; when the capsule is pricked with a needle there is an escape of the milky white fluid, often containing some flocculent particles, into the anterior chamber. In two cases in which I left the opaque fluid in the anterior chamber, I found the needling operation followed in the course of twenty-four hours by increase of tension. I now always adopt the precaution of evacuating it after making an incision with a broad needle.

The lens fibers developed laterally are formed by the lengthening out, forward and backward, of cells derived from proliferation of those composing the anterior layer of the lens vesicle. They gradually come to encircle the nuclear fibers developed from the cells of the posterior layer of the lens vesicle, and so cut it off from contact with the lens capsule. The separation of the original nuclear lens fibers from the capsule gradually increases with the growth of the lens.

Some laterally formed lens fibers lengthen out most backward and others most forward, but in the normally developed lens the nucleus is situated equidistant from the anterior and posterior capsule. Displacement backward of the nucleus of the lens is met with as a congenital malformation, there being a partial or complete failure in the backward growth of the laterally developed lens fibers; complete failure is sometimes due to adherence of the nucleus to the posterior capsule.

Patry, in his monograph of lenticonus posterior, in which he analyzes the histologic appearances in sixteen recorded cases, says:

> The nucleus is often (8 cases) situated very near the posterior pole, sometimes in immediate contact with the posterior capsule. This position is most often in association with a rupture of the posterior capsule.

As I have already pointed out, where he speaks of rupture of the posterior capsule in connection with this condition, I should say failure of development.

Knies[13] has suggested as an explanation of the changes in some cases of congenital axial cataract which he met with; that adhesion of the nucleus to the anterior and posterior capsule had taken place, and that consequently it assumed a spindle-shaped formation on the expansion of the lens by the development of cortical fibers laterally.

Vossius[14] adopts the same explanation for a case of his in which there was in one eye a typical anteroposterior fusiform opacity, and in the other an anterior polar opacity and a lamellar cataract with a filamentary opacity passing between the two.

There is a variety of congenital axial cataract termed by Gunn[15] "coralliform" for which it seems to me difficult to accept the explanation suggested by Knies for his cases. In this coralliform cataract, tube-like opacities are seen to radiate forward and outward from the center of the lens toward the capsule and end in an ampulliform manner. In the absence of any histologic proof of the nature of such opacities, I would suggest that they are probably situated in the lines of suture between the fibers.

The lines of suture between the ends of the lens fibers vary in their arrangement in different animals, and in the human lens the arrangements which are met with in different animals are met with at different levels in its substance.

In the most primitive form of lens, such as the globular lenses of some fishes, all the lens fibers extend from a central point anteriorly to a central point at the posterior pole, and the suture passing anteroposteriorly is a single straight line.

The simplest divergence from this arrangement is for the ends of the lens fibers, instead of meeting at a point to meet along a line; the line at the anterior pole being at right angles to that at the posterior. This permits of some shortening of the lens fibers, those which have to extend farthest anteriorly not having to extend so far posteriorly, and *vice versa*.

A further modification effecting the same purpose is for the line of junction of the fibers to have a triradiate arrangement, the three arms of the triradiate figure at the anterior pole being situated in the reverse direction to those at the posterior.

A more elaborate arrangement still is the formation of a star-shaped figure with primary and secondary radiations along which the ends of the fibers come into contact.

The human lens in fetal life is at first globular; the fibers which are developed from the posterior layer of the secondary vesicle, and which form the extreme nucleus in the adult lens, have their extremities all meeting anteriorly and posteriorly.

As new lens fibers are laid on at the sides the lens alters in shape; the lateral diameter increases more than the anteroposterior. A different mode of meeting of the lens fibers at the surface is then met with. At birth the simple triradiate figure at the anterior and posterior pole is seen.

With the further growth of the lens and the formation of fresh cortical layers, the simple triradiate suture becomes in them replaced by the more complicated star, which at the surface of the lens in the adult is seen to present primary and secondary radiations.

In sections of the human fetal lens or of the lens at birth, the lines of suture running anteroposteriorly between the laterally developed lens fibers can easily be seen. Where the hardening of the lens has been imperfectly carried out and the lens fibers have shrunk, some expansion of the lines of suture frequently takes place. In sections of the adult lens the lines of suture are not to be detected.

It is well known that in both congenital cataracts and in cataracts occurring in late life disturbance may take

13. Arch. f. Ophth., xxiii.
14. Beitr. z. Augenh., ix

15. Tr. Ophth. Soc. U. K., xv, 119.

place at the surface of the lens in the lines of junction between the lens fibers, resulting in a superficial triradiate or star-shaped opacity. What I now suggest is that disturbance in the lines of sutures, not only at the surface, but also in their course as they radiate forward and outward from the nucleus, accounts for lines of opacity in congenital cataracts which are seen to radiate in that direction.

The defects which I have described as arising during this third stage of development in the lens may be summarized as follows:

1. The formation of congenital Morgagnian cataract from failure in development of the lens fibers laid on laterally and their replacement by opaque albuminous fluid.

2. Congenital displacement backward of the nucleus of the lens, associated with a defective growth backward of laterally developed lens fibers.

3. Congenital fusiform axial cataract (of Knies and Vossius), due to adhesion of the nucleus of the lens to the anterior and posterior capsule and defective growth forward and backward of the laterally developed lens fibers.

4. Axial opacities radiating forward and outward from the nucleus and located in the lines of sutures between the lens fibers laid on laterally, which run in that direction.

In conclusion, I would, as the outcome of my clinical and anatomic studies, make the following suggestions concerning the treatment of congenital cataract.

First.—To wait until a child is 10 months old before operating. At an earlier age the cornea is so small and the anterior chamber so shallow that the necessary instrumentation can not be so satisfactorily carried out as in the more fully developed eye. Moreover, the amount of aqueous humor is so small that it does not suffice for the solution of the liberated lens substance.

Second.—In some cases in which the pupil is small and does not dilate well with atropin it is best to commence with an iridectomy.

Third.—In nearly all cases it is well to begin with a needling. For valuable information can be obtained by its means as to the thickness of the capsule and consistency of the lens should it fail to liberate much lens matter to the action of the aqueous.

Fourth.—If the cataract is a dense, white, anterior polar one, set in a ring of clear, or partially clear, lens substance, and apparently flattened from before backward (the so-called disc-shaped cataract), then an attempt should be made to separate the central white opacity with a needle and let it fall into the anterior chamber. Two needles are sometimes required to effect this.

Fifth.—If on pricking the capsule, milky-white fluid escapes into the anterior chamber (congenital Morgagnian cataract) it is well at once to evacuate this fluid, for fear of increased tension ensuing.

Sixth.—In some cases of congenital cataract the whole lens and capsule can be removed in a most satisfactory way by grasping it with forceps. Very often, however, such a procedure is followed by escape of vitreous. It is difficult to differentiate which cataracts can be safely dealt with in this manner. They generally seem to be complete cataracts with a tough capsule and lens matter of a gelatinous consistency.

Seventh.—If after a needling and some absorption of liberated lens matter, a dense, tough, white, fibrous-looking membrane remains, there is probably some atypical development of the anterior part of the vitreous. An attempt had then best be made forcibly to displace the membrane downward and backward out of the axis of vision.

Original Articles

OCCURRENCE OF SPONTANEOUS ARTERIAL DEGENERATION IN THE RABBIT.*

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As one of the earlier investigators of lesions of the vascular system occurring in the rabbit after intravenous injections of adrenalin[1] I have been interested in the observation of Drs. Miles and Johnstone[2] concerning the frequent occurrence of spontaneous arterial lesions. These investigators suggest that the vascular lesions, ascribed by many observers to the injection of adrenalin, are in reality of spontaneous origin. In support of this view they present the results of the examination of a large number of normal rabbits in which lesions similar to those produced by adrenalin occurred with equal or greater frequency.

The inevitable conclusion is either that the spontaneous lesions are common and that the individuals working with adrenalin have been careless about their controls, or that rabbits of certain localities, or those raised or kept under certain conditions, are peculiarly prone to spontaneous lesions. The first of these conclusions has been met by Dr. Joseph L. Miller,[3] who points out that in Jores exhaustive review of the many attempts, often on a large scale, to produce arteriosclerosis experimentally there is no mention of successful results. These experiments included the use of a variety of substances and in by far the larger number the rabbit was used. Furthermore, during the past few years many attempts have been made to produce arterial lesions by subcutaneous and intraperitoneal injections of adrenalin as controls of the intravenous administration; a procedure necessitating a very careful comparative study of the rabbit's vascular system.

The only spontaneous lesions, according to Miller, which were described previous to the work of Miles and Johnstone were the slight changes described by Fisher in poorly nourished animals, a single instance reported by Ophüls and possibly the atheroma, in two rabbits, ascribed by Croftan to injections of hypoxanthin. Miller, moreover, points out that in Loeb's series of 100 normal rabbits and Meronescu's of 300, no lesions were found and also that the subcutaneous adrenalin injection experiments of Miles and Johnstone are of no value. The weight of evidence, therefore, does not support the suggestion that spontaneous lesions are general but have been overlooked by the neglect of control observations.

In this respect, however, I must admit my negligence in not reporting control observations in my earlier communication. Control observations were made on a small number of animals with entirely negative results, but on account of the small number were not published. During the past winter, in order to determine the incidence of spontaneous lesions in the rabbits supplied to

* Work done under a grant from the Rockefeller Institute for Medical Research.

1. Jour. Exper. Med., 1906, viii, 74, 400; Am. Jour. Med Sciences, 1906, cxxxii, 737.
2. The Journal A. M. A., Oct. 5, 1907.
3. The Journal A. M. A., 1907, xlix, 1789.

the Bender Laboratory, I have examined 62 animals. Except for six pairs obtained from dealers in Pittsfield and Brookline, Mass., these animals were procured in the neighborhood of Albany, usually in small lots of one, two or three pairs, and in large part were animals which had been caught in the fall and domesticated but a short time. Of these, 51 may be considered presumably normal animals in that they had not been used previously for experiment of any kind, or were used only on the day of killing for blood pressure experiments or to obtain blood or fresh organs. They also represent animals which, in that they were used shortly after purchase, did not pass through a long laboratory life. They may be grouped roughly according to size into three groups of about equal number as large, small, and medium size. Vascular lesions were found in but three; these consisted, in each, of a few minute patches at the beginning of the aorta. All were large animals and presumably full grown.

Of the remaining eleven animals, one suffered from an abscess of the hip; three had received repeated injections of dog's serum; one, nephrotoxic serum; one, human blood; one, typhoid bacillus and three, chrome salts. These were all in the laboratory for several weeks or months. In this group lesions of the aorta occurred in four; in the animals receiving, respectively, injections of typhoid bacillus, dog serum, nephrotoxic serum and human blood. In two of these the lesions were diffuse involving irregularly the entire aorta and comparable to those produced by adrenalin. In the other pair a few small areas were present at the beginning of the aorta only.

This control study shows that spontaneous lesions were found in three of 51 presumably normal rabbits or in practically 6 per cent., or, if the animals used for various experimental purposes are included, in 7 of 62 animals or 11 per cent. This last view, however, is hardly fair, for as the lesions were present in four animals of the second group, or in 36 per cent., it cannot be denied that the experimental procedure may possibly have had some share in their production. Certainly the influence of typhoid toxin and alien sera can not be entirely set aside in view of our knowledge of the very general degenerative changes which these substances cause.

In this connection it may be mentioned that Israel[4] in his study of the relation of heart hypertrophy to experimental nephritis has described and pictured a very diffuse lesion of the aorta in a rabbit receiving injections of alcohol directly into the kidney. This observation has been quite generally ignored in the recent literature of experimental arteriosclerosis; but Israel's illustration plainly pictures a lesion of the aorta not to be distinguished from that caused by adrenalin.

It would appear, therefore, that while spontaneous arterial degeneration may occur in the rabbit, it is not as constant a condition in all localities as the investigations of Miles and Johnstone indicate. Moreover, the figures here presented offer a satisfactory control of my earlier report on the general subject of experimental arteriosclerosis due to adrenalin and the later report in which I conclude that single doses of adrenalin may cause arterial lesions, a conclusion which might appear doubtful if viewed only in the light of the experiments of Miles and Johnstone.

In my opinion the occurrence of spontaneous lesions in the rabbit does not diminish the importance of the lesions due to adrenalin, but on the contrary, increases their importance, as an example of a lesion occasionally occurring naturally, but which may readily be produced experimentally. The rabbit thus becomes a peculiarly valuable animal for the study of vascular lesions, for the interest of the adrenalin lesion lies not so much in its arteriosclerosis-like nature as in the opportunity offered for the study of degenerative and reparative lesions of arteries.

The possibility of a variety of factors operating to cause vascular injury is suggested by the four positive findings in the second group of 11 rabbits. The contrast with the first group is very striking and would indicate that a study of the arterial system of a large number of rabbits, kept under a variety of conditions, and subjected to various experimental procedures, would yield results of great value concerning chronic vascular lesions.

Finally it may be stated that the demonstration of these spontaneous lesions in no way vitiates the importance of the experimental lesions but does demand a very careful control study of the rabbits in each locality in which experiments are made.

4. Virchows Archiv., 1881, lxxxvi, 299.

THREE CASES OF CEREBELLAR TUMOR.

OPERATION IN TWO CASES; RECOVERY IN ONE.*

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The subject of tumors of the cerebellum has excited much interest during the past few years and the question as to the advisability of operation is still a mooted one. It seems desirable, therefore, to add to the literature all the cases possible, so as to throw more light on the subject, and this is my excuse for reporting at this time only three cases of cerebellar disease. These all, however, exhibit some interesting and instructive features.

Opinion varies widely as to the beneficial results of operation. For example, Sachs says that out of twenty-three of his patients, not one was cured. Operation was done in seven of these cases, but without recovery. Frazier, in 1904, collected reports of one hundred and sixteen cases of operation on the cerebellum, with recovery in 15 per cent. Starr, in 1903, gave as a result of operation in fifty-eight cases of tumors of the cerebellum, recovery in sixteen; that is, he states that the tumor was removed and the patient recovered.

It seems, therefore, as if there should be some more definite understanding as to the meaning of recovery. If an author means by recovery that the growth has been removed and the patient survives a few weeks, it is a very different thing from a case in which there has been no return of symptoms for two or three years; and one cannot help feeling that writers mean different things when they give such different results.

In the cases reported by me, one patient recovered from the operation, and when seen seven months later, he was apparently in perfect health. In this case, the growth was a cyst, the contents were evacuated and the wound closed. The patient when seen had no headache, his gait was normal and his mental operations were good. His vision, however, was practically lost. In the right eye he was totally blind, and in the left there was

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

only sight enough to enable him to go about and read very large type. The vision in this case failed rapidly after the operation, although the swelling of both discs subsided very rapidly.

In the second case the patient had shown no signs of brain disease until nine weeks before she came under observation. Her symptoms progressed so rapidly and vision had begun to fail to such an extent that, although there were no definite localizing symptoms to indicate a point for trephining, it was thought advisable to do a decompressive operation. Dr. Mills saw the patient with me and on account of the nature of the symptoms thought it possible that the lesion might be located in the vermis; at any rate, it seemed as likely that the tumor was situated in one hemisphere as the other. There was paralysis of the sixth nerve on the right side and this fact made us select a point over the right hemisphere for making the first trephining. No growth was found at operation, but at the autopsy which was made thirteen days later, a tuberculous tumor was found in the anterior part of the right hemisphere of the cerebellum, infringing on the medulla and making a marked depression in its right side. In the left hemisphere were two smaller tumors. The fact of there being a growth in each hemisphere would account for the bilateral symptoms presented by the patient during life. In walking, she would sometimes pitch to one side and sometimes to the other. In this case, although the swelling of the discs subsided in a remarkable manner after the operation, the vision continued to fail.

These two cases teach us that in order to save vision an operation must be done at an early date.

A point of interest in the third case is that sudden death occurred while the patient was in fairly good condition. Sudden death in brain tumor is not unusual. I have seen two or three instances of this myself. A lesson to be learned from this case is that, had an early operation been done, the patient would probably have been cured of his trouble because the tumor was found postmortem to be one which could have been readily removed. This is another example of the importance of early operations in tumors of the cerebellum. If one comes to the conclusion that an operation must be performed, it is worse than useless to delay to try the effect of drugs, or for any other reason. In the words of Macbeth: "If it were done when 'tis done, then 'twere well it were done quickly."

CASE 1.—*Patient.*—G. H., was seen in consultation with Dr. Louis Jurist on Sept. 15, 1907. The boy was 10 years old. The parents were both healthy and two brothers and two sisters were healthy. The father admitted that he had a specific urethritis, but denied any history of syphilis in himself or family.

History.—Fourteen months previously, in July, 1906, the boy was hit in the eye with a wooden peg. He became sick at his stomach, vomited and had severe headache for some time afterward. There was no further trouble after this. One year ago he began to complain of pain in the occipital region. This constantly grew worse, and in June, 1907, he would often vomit during the severe headaches. These violent attacks usually occurred in the early morning. Five weeks ago he had severe headache and vomiting, which lasted for three days. The eyes were examined by Dr. Schneideman, who found that both optic discs were very much swollen. The patient was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases, Sept. 28, 1907.

Examination.—The patient was found to be a well-nourished boy, but of pale color. In walking there was distinct incoordination and a tendency to pitch toward the left side. There was no loss of power in either arm or leg. When the mouth was opened it was drawn slightly to the right. The tongue was protruded straight. The pupils were large and equal. The vision was very poor. The knee-jerks were normal and equal. The plantar reflex was normal; there was no Babinski phenomenon or ankle clonus. The heart and lungs were normal. The tongue was coated, but the patient's appetite was good and the digestion seemed fair. The conspicuous symptom was pain in the head. This was quite violent and was referred to the occiput. There was more or less pain all the time, but there were attacks of severe headache with vomiting. There was no tenderness over any part of the scalp.

After admission to the hospital the pain in the head lessened in severity, and it was not until October 5 that the boy had a severe headache. After this time the headaches increased in frequency, and the boy's walking became worse; he staggered considerably, deviating to the left. The station was poor and he was unable to stand with the eyes closed.

Diagnosis.—Dr. Charles K. Mills kindly saw the patient in consultation and agreed with me that the case was one of tumor of the cerebellum, and that it was probably in the left hemisphere. Dr. W. J. Taylor was asked to see the patient with a view to operation, and after consultation it was decided to open the skull and attempt to remove the growth.

First Operation.—The following notes have been furnished by Dr. W. J. Taylor: Oct. 12, 1907. Ether was given as an anesthetic and a curved incision made over the cerebellum on the left side. The skin and soft tissues down to the bone were deflected, and there was now tremendous hemorrhage, probably from the veins leading from the bone to the scalp. The patient's prostration was out of all proportion to the amount of blood lost. The hemorrhage from several of these sinuses, or veins could be controlled only by plugging the opening in the bone with bits of sterile wood, and Horsley's way was used freely all over the surface of the bone. With the chisel a small opening was made in the skull and then enlarged to about an inch and a half in diameter with the rongeur forceps. The patient's condition was now so alarming that it was deemed best to pack the wound and wait for him to recover from the shock. The dura, therefore, was not opened, although it was very tense and bulging. The patient's general condition was so bad that intravenous saline injections were given and a variety of stimulants employed hypodermically.

In spite of the great loss of blood and the shock, he recovered very satisfactorily from the effects of the operation. At Dr. Sinkler's suggestion, it was decided to wait before doing anything further to see if this decompression would relieve the patient's symptoms. He was very much relieved of his headache, but by November 2 the headache had returned, there was cerebral vomiting, and his condition was steadily growing worse.

Second Operation.—He was therefore again given ether and the flap of the skin over the former wound was carefully dissected away from the dura. The dura bulged very much more than at the first operation, and there was little or no hemorrhage from the scalp. The dura was incised by a curved incision, and immediately the cerebellum tissues pushed out through the slit that was made. This was rapidly enlarged, and the brain bulged at least one inch above the surrounding dura. While dissecting off the dura—for it was adherent at one or two points where it had to be stripped off with the finger—there was noticed a slight difference in appearance of the surface of one of the convolutions near the mastoid side of the wound. This change was so peculiar in its character that I had just said that here undoubtedly was a tumor, when a cyst gave way and a spurt of serous fluid was ejected with such force that it went three feet away from the wound. The column of the fluid was nearly the size of a pencil. Of course, it was impossible to collect any of this fluid for examination, but its consistence and appearance was that of an ordinary pleuritic effusion. Immediately the cerebellum collapsed, and instead of there being a protrusion there was a depression in the wound. The opening in the cyst was then slightly enlarged, and it could be seen that there was a thin-walled cyst, the wall of which could not be dissected out. There was no evidence of malignancy or induration about it. A small drain of iodoform gauze was carried down to and into the opening of the cyst and the dura was closed over it.

Later History.—The patient made an absolutely uninterrupted recovery; indeed, by the next morning he said that he felt perfectly well. All of his pain was gone and he did not vomit once, even from the ether. In three or four weeks he was walking about and feeling as well as usual. Seven months later he was in good health, but had been admitted to an asylum for the blind.

Eye Examination and History.—Oct. 1, 1907, the vision of the right eye was 6/0 —; of the left eye 6/6—. The pupils measured 4.5 cm. and reacted normally to light, forced convergence and accommodation. Ophthalmoscopic examination revealed pronounced choked discs, the height of the swelling being between 6 and 7 D. At the lower edge of the swollen disc of the left eye there was a large retinal hemorrhage. No macular changes were noted in either eye. The visual fields were concentrically contracted for form and colors. These examinations were made by Dr. Holloway, and seven days later repeated by Dr. de Schweinitz, who found an increase in the swelling of the right optic disc, the height of which was now 8 D., while the left optic disc remained about the same, namely, 7 D.; no change in the other ocular conditions previously noted, and no palsy of any exterior ocular muscle. Convergence, however, was poor, the left internus being the weaker.

The next ocular examination was made Oct. 18, 1907, or six days after the first operation, at which there had been excessive hemorrhage. At this examination Dr. Holloway found the height of the swollen disc of the right eye to be 7 D., and therefore slightly less swollen than it was on October 8. An added ophthalmoscopic appearance was the formation of a complete stellate figure in the macula, composed of milky-white striæ, at the outer limits of which were several small hemorrhages, and adjacent to them a thin, diffuse hemorrhage. There was also one fresh hemorrhage on the temporal side of the swollen disc. The height of the swollen disc of the left eye was 7 D., and in the macula a number of fine, yellowish-white dots had formed, which were associated with several punctate hemorrhages. Seven days later there were practically no ophthalmoscopic changes, except that in the left eye the previously fine punctate spots had begun to form by coalescence a stellate figure.

November 2, three days after the second operation, Dr. de Schweinitz found a notable diminution in the swelling of each optic disc, that on the right side being reduced to between 3 and 4 D. in height, therefore a lessening of practically 4 D., while on the left side the disc measured between 5 and 6 D., or from 1 to 2 D. less than it had been prior to the second operation. There was marked depreciation of central vision of each eye. Again, five days later there was still further reduction of the visual acuity, so that now the right eye had only doubtful light perception, while in the left eye the vision was reduced to 4/20 and one letter of 4/15. There was still further reduction in the height of the swollen discs, which now on the right side measured about 3 D. and on the left side between 4 and 5 D.

At the next examination, on November 15, the right eye was found to be entirely blind and the vision of the left eye 5/15 —. There was no light reflex of the right pupil, but the left pupil responded promptly to light. The conditions of the discs were about the same as at the last examination, and continued so, with gradual loss of vascularity and reduction in the height of the swelling, until December 6, when the vision of the right eye was, as before, entirely obliterated, and of the left eye about 6/30.

The evidence of marked postpapillitic atrophy, most pronounced on the right side, were clear, and the swelling of the discs had almost disappeared.

On Jan. 10, 1908, the right eye was entirely blind and the left eye had a vision of 6/60. There was pronounced postpapillitic atrophy on both sides.

This condition of affairs had continued until the present time, and at the last examination, on March 27, 1908, both discs now being flat and showing well-marked atrophy, the visual field of the left eye was reduced in size and color perception practically lacking. The vision of 6/60 was still retained.

Exactly how soon after the first operation the depreciation of central visual acuity began can not be stated, owing to the fact that the boy's condition was such that no accurate tests could be made. In spite of the rapid reduction in the swelling which took place after the second operation and the evacuation of the cerebellar cyst, atrophy of the optic nerve on each side rapidly supervened. This unfortunate result in an otherwise brilliant case from the surgical standpoint has been noted in other instances in which there has been excessive hemorrhage, and it is not improbable that to such excessive hemorrhage this atrophy should be attributed, owing to a rapid deterioration of the ganglion cells. In any event, if the vision of 6/60 is retained, which now seems likely, the operation saved the boy from total blindness, which otherwise must certainly have taken place.

CASE 2.—*Patient.*—M. K., aged 16, a girl, had been employed in an overall factory for seven months and was admitted to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, April 21, 1908. Her family history was negative, as far as could be ascertained.

History.—She seemed to have enjoyed good health; there was no history of injury. The present condition developed about nine weeks previous to admission, with violent, persistent pain in the head, projectile vomiting after taking food, unsteadiness of gait and double vision. She had grown steadily worse.

Examination.—She was found to be a thin, poorly nourished girl, quite tall and slender. There was an internal strabismus of the right eye, the result of paralysis of the right externus; and she kept the right eye closed much of the time in order to secure single vision. The resident physician thought that there was ptosis of the right lid, but this was uncertain. At any rate, in the course of three or four days whatever ptosis there had been had entirely disappeared. The thyroid gland was somewhat enlarged, especially the right lobe. The heart's action was rapid, but there was no murmur. There was distinct impairment of resonance at the right apex. Examination of the abdomen was negative. The patient's walk was very unsteady. Sometimes she pitched to the right side and sometimes to the left, and often would fall if not supported. In standing her station was bad, with the eyes open or shut. It was a little worse with the eyes open, but did not grow decidedly worse after long standing. There was a distinct tendency to sway backward while standing, and the patient often had to be held to keep from falling. There was no change in sensation in any part of the body, and no paralysis in any muscle or group of muscles. There was a lack of facial expression, but the movements of the face were equal on both sides. The knee-jerks were completely absent; the plantar reflex was present. The patient had no cough and had a fairly good appetite. She was ordered rest in bed, soft diet, potassium iodid 10 gr. three times a day, the dose to be increased one grain three times a day; inunction of mercurial ointment daily.

Eye Examination.—The examination of the eyes was made by Dr. Holloway on April 24. He made the following report: "O. D., 6/6; O. S., 6/6; pupils equal—larger than average. They react to light and to indirect accommodation and convergence. Media are clear. The patient has a bilateral optic neuritis, more extensive on the right side. The veins are much fuller on the right. There is no exudate in the macular region and there are no pronounced hemorrhages. The height of the right disc is 4 — 4½ D.; left disc 3½ — 4 D.; fundus, 1 — D. The patient has a paresis of the right external rectus. On rotation of the eyes to the left, the left eye attains full limits, but excursion is not well maintained. On rotation to the right, the right eye goes to within ¼ inch of the left canthus. There is a slight convergent squint in the left eye. On lateral rotation there are nystagmoid movements at the outer limit, slight when rotated toward the right, more pronounced when rotated toward the left; no nystagmoid movements on vertical rotation." Four days later, April 28, Dr. de Schweinitz made an examination of the eyes and reported: "Right eye vision, 6/9 — 6/6; left eye vision, 6/6 — 6/6. Right eye, optic neuritis, surface + 4 diopters. Veins very full and uneven. Full vascularity of discs. Left eye beginning neuritis; surface + 2 diopters. Veins not large. Center of disc not filled in." The patient seemed to improve somewhat for several days. The vomiting ceased and also the

pain in the head. This was probably due to the fact that she was kept extremely quiet. On May 1, Dr. Holloway made another examination of the eyes and found the fields distinctly contracted. Vision, right eye, 6/9 and four letters on 6/6. Vision, left eye, 6/9, and one letter on 6/6. Height of disc about the same, but process in the left eye seemed more pronounced.

The patient's symptoms all seemed to be growing worse. There was return of vomiting and some pain in the head and vision was failing distinctly. I asked Dr. Charles K. Mills to see the patient with me and he agreed fully in the diagnosis of the cerebellar tumor. There were no positive localizing symptoms, but we decided that in order to save the vision, if possible, a decompressive operation should be performed.

Operation.—In view of the fact that the sixth nerve palsy was on the right side, we thought best to trephine first over the right hemisphere. Dr. G. G. Davis performed the operation. An opening 1½ inches in diameter was made in the skull and the dura was opened. The cerebellum showed more than normal tension and it was softer than usual. An exploratory puncture was made with a probe in two directions, but no fluid was obtained and no sense of either growth or cyst was felt. There was considerable amount of hemorrhage, but not excessive. The patient was under the anesthetic for two hours and a quarter.

Postoperative History.—The patient made a good recovery from the anesthetic and seemed in good condition the next day. There was no change in vision, although it could not be carefully tested. On May 8, three days after the operation, Dr. Holloway made an examination of the eyes and found vision O. D. 6/15 and two letters on 6/12; O. S. 6/9 and two letters on 6/6; no free hemorrhages and no reduction in the swelling of the discs. On May 12, seven days after the operation, Dr. de Schweinitz made an examination of the eyes and reported: "Right eye, apex of disc not more than + 2 D.; edges still veiled but visible. Left eye, all edges clear and surface of disc not more than 1 D. Outer half shows beginning atrophy and change. Vision 6/60 in each eye." The patient maintained that she could see no more. Dr. de Schweinitz said: "There has been an astonishing subsidence of the choked disc. In point of fact, it has nearly disappeared on left side and only about a diopter and a half remains on the right side. I am sorry to say, however, that direct vision has materially depreciated, so that now there is only about 6/60 or 1/10 of normal vision as compared with 2/3 before the operation. I hope that this is more apparent than real, and that the patient's very depressed condition may have accounted for some of her inability to read letters." The patient grew rapidly worse from this time. On May 15 her temperature varied from 100 to 102; respiration was 30 to 40. Her mind was cloudy; there was twitching of hands and arms, but more continuous twitching on the left side. There was some hypostatic congestion of the lungs, which had been steadily increasing. May 17 patient died, twelve days after the operation.

Autopsy.—This was made by Dr. H. B. Wilmer, the resident physician, who kindly gave me the notes. There was absence of rigor mortis; considerable wasting of the muscles; slight distention of the abdomen. The skullcap was removed in the usual manner; the dura seemed slightly thickened, with marked congestion of the vessels. The brain substance seemed of normal consistency. On inspection of the base of the brain there was seen a dense grayish membrane covering the base and extending up the sides of the cerebellum. There also seemed an increase in the amount of cerebrospinal fluid. This was not measured, as a great deal was lost in the process of removing the brain from the cranial cavity. All the nerve tracts at the base of the brain were intact. The vessels of the cortex were markedly congested and stood out prominently. Apart from this the gross appearance of the cortex was normal. The pia at base of the brain and over the anterior surface of the pons, extending to the optic chiasm was somewhat milky in appearance. About the optic chiasm there was a moderate amount of yellowish-gray fibrous exudate. The sixth nerves did not appear abnormal at exit. The cerebellum showed on exterior of the right side the site of operation. There was a cavity with ragged edges large enough to insert the end of the little finger, with some blood clots around the edges. On cross-section on the left side in about the central portion of the hemisphere were seen two rounded gray masses, well defined and quite different from the surrounding brain tissue. The anterior tumor was separated from the second by normal brain tissue and was 15 mm. in diameter and 5 mm. in depth. The posterior tumor was larger, being 8 mm. in diameter and 8 mm. in depth. In the cerebellar substance of the right hemisphere another tumor was found, 18 mm. in diameter and 12 mm. in depth, bordering on the median line and extending forward so as to cause marked pressure on the medulla, where there was observed a small depression just above the decussation of the pyramids. The growth did not extend outside the cerebellar substance. On microscopic examination the growths were found to be tuberculous. At the right apex there was found tuberculous consolidation and a considerable amount of cheesy matter could be expressed from the lung tissue.

CASE 3.—*Patient.*—P. H., aged 26, married, was seen in consultation with Dr. William Turner VanPelt at the Episcopal Hospital, March 29, 1905. He had previously been under the care of Dr. Burton Chance, who has reported the case at length from the ophthalmologic point of view.[1]

History.—When about 15 years of age the patient had an attack of insolation, from which he recovered without ill effects. He was a printer of cotton stuffs. He denied venereal disease and stated that he had always been temperate. About Easter, 1904, he was suddenly seized with a violent attack of headache, which lasted four days. In July he sailed for England, his native country. During the voyage he had violent vomiting, which was supposed to be due to seasickness. After landing, however, he had severe headaches and violent attacks of vomiting which were projectile in character. Then for a considerable period he had headaches on alternate days, the attacks usually occurring after awakening in the morning. After September 1 the attacks were infrequent. He returned home in October, and during the voyage he was very sick and had violent spells of vomiting. After landing he suffered intensely with pains in the head in the occipital and frontal regions. About the middle of November the right side of the face became crooked and continued so for about a week. About this time it was noticed that the external rectus of the left eye was paralyzed, and a day or two later diplopia set in. This was followed by dimness of vision and photophobia. Except on the days of the headaches, when the arms and legs felt numb, he was able to take the usual amount of exercise. The headaches gradually subsided and he felt quite well. On Dec. 22, 1904, the patient was first seen by Dr. Chance. At that time there was nothing remarkable in gait or station. The tendon reflexes were apparently undisturbed. Mental condition was clear. The patient's chief complaints were referred to the eyes. The acuity of vision of the right eye was reduced to 6/15 and the left eye to 6/22.5. The accommodation power was abolished. The optic axes were markedly convergent; the left external rectus failed to effect parallelism. There was no nystagmus. The optic discs were swollen to + 5 D. The retina was everywhere edematous. The arteries were constricted and reduced to threads, while the veins were great broad tortuous currents. On the swollen nerve head were several flame-shaped hemorrhage extravasations. The patient was admitted on December 27 to the Germantown Hospital. He was confined to bed and a course of alteratives, diaphoretics and salines was instituted. At the end of ten days the diplopia disappeared and the edema of the retina and venous engorgement became remarkably reduced. At no time was there vomiting, headache, disturbance of locomotion, or change in station. The acuity of vision remained unchanged and the optic papillæ remained as prominent as at the earlier examinations. The patient was discharged from the hospital on January 23 and remained in fairly good condition until February 26, when he suffered from intense right-sided headaches. Two days later there was convulsive seizures involving the arms, with stiffness in the back of the neck, occipital pains with vomiting. The patient was admitted to the Episcopal Hospital on March 2, 1905.

Examination.—He was found to be weak and debilitated, but without any actual loss of power in the extremities. The blood

1. Tr. Coll. Phys., Philadelphia, 1905.

count was perfectly normal. There was no albumin or sugar in the urine. The vision of the right eye was 20/70; left eye, 20/200. The posterior rotation of the left eye was somewhat impaired by the paresis of the external rectus. All movements of right eye showed no impairment of the extraocular muscles. In neither eye were there nystagmoid movements. The pupils reacted normally to light, convergence and consensually. The fields of vision were contracted. The ophthalmologic examination showed great swelling of the retina, the projection of the optic discs to 6 D. splotches of degeneration and small linear hemorrhages and enlargement of the optic disc. There was spasticity of the muscles of the neck with retraction of the head.

Course of Disease.—Mercurial inunctions were ordered daily and light diet only was allowed. At once marked improvement in the health took place and continued for ten days. There were no attacks of vomiting and he was greatly relieved of the headache. After two weeks the diet was enlarged and potassium iodid in increasing doses was prescribed. After this time there was a return of the headaches, with much violence. The pain was usually located in the occiput, rotating to the left frontal region. The head was retracted. Vomiting was frequent. When seen by me the patient complained of violent pain in the occiput; there was stiffness of the muscles of the neck, with a tendency to retraction of the head. The patient could walk unassisted, but the gait was very unsteady and he staggered with a distinct tendency to fall to the left side. The patella reflexes were abolished. A diagnosis of tumor of the cerebellum, probably on the left side, was made, and an operation was urgently advised. However, it was deemed wise to continue medical treatment for a few days longer, and the operation was therefore postponed. On April 7, while in fairly good condition, the patient was seized with violent delirium, from which he fell into a comatose state and died suddenly four hours later.

Fig. 1. Case 2.—Showing two tuberculous tumors in left hemisphere of cerebellum and one in right. A indicates tumors.

Autopsy.—A tumor was found situated in the outer portion of the left lobe of the cerebellum, to which it was loosely attached. It was not at all infiltrating, but had made a depression in the left cerebellar lobe 2.5 cm. in depth. The tumor was very firm, almost globular, with a somewhat irregular surface, and did not appear to have been adherent to the dura. It was 0.4 cm. in width and 5.5 cm. in thickness from above downward. When cut it appeared friable and resembled a fibrosarcoma. It had caused some pressure on the fourth ventricle and thereby moderate internal hydrocephalus of the cerebrum, although the aqueduct of Sylvius was not much dilated and the fourth ventricle not at all. The third and lateral ventricles of the brain were moderately distended, especially the posterior horn of the left lateral ventricle, the floor of which was forced upward by the pressure of the tumor on the under surface of the left occipital lobe. None of the cranial nerves were implicated in the tumor. The microscopic examination showed that the tumor was a fibrosarcoma. This report was made by Dr. W. G. Spiller, who remarked that he had "never seen a tumor of the cerebellum which offered more favorable conditions for operation than did this tumor, situated as it was on the lateral portion of the left cerebellar lobe and not infiltrating the cerebellum in the least."

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DISCUSSION.

DR. CHARLES K. MILLS, Philadelphia: I saw one of these cases with Dr. Sinkler. It is quite an interesting point in symptomatology that this patient who had on each side of his brain in each lateral lobe of the cerebellum, a small tumor, did not present the laterality so often observed in lateral lobe growths, nor did he present the peculiar compensatory attitude of the head or body which is observed in these unilateral cerebellar growths. This record is a small but important addition to our knowledge of the symptomatology of bilateral lesions of the cerebellum. The growth on one side seemed to compensate for that on the other in the production of the symptomatology, at least so far as any trending to one side or any one-sided attitude was concerned.

DR. JOHN J. THOMAS, Boston: I saw a number of years ago a case in which operation had been refused, and in which on autopsy we found a tumor on each side of the brain at the cerebellar-pontile angle; and there the unilateral symptoms pointing to one side seemed to be counteracted by the presence of another tumor on the opposite side. My own experience lately has confirmed what Dr. Mills and Dr. Sinkler have said, that if we are going to have any effect on the vision from operation, it must be done very early.

DR. ARCHIBALD CHURCH, Chicago: Out of seven of my cases in which operations have been done, four patients have made what might be called perfect recovery. In the first case in which Dr. McArthur operated for me, and which was seen by Dr. Jones in St. Luke's Hospital just after the operation, we found a hemorrhagic cyst, and there was a clear history of cerebellar hemorrhage. This patient recovered and worked as a laborer practically for years, but has disappeared. I did not favor operation in the second case. The patient was afterward operated on in St. Louis by Dr. Mudd under the direction of Dr. Fry. The tumor was removed and the man lived over two years. During much of this time he served as proprietor and editor of a newspaper. The third patient came to me from Wisconsin, a clergyman, who presented symptoms of cerebellar tumor. Dr. Brower and Dr. Bassoe confirmed my diagnosis. The patient was operated on by Dr. Bevan, who found a large tumor of the cerebellum, but did not remove it. A couple of weeks later, on my urging him to do so, he reopened the wound and removed the tumor. The man has been conducting the services of a country parish ever since. The fourth case was that of a boy who received an injury on the head by swinging against the corner of a house in a rope swing, striking the back of his head. Some weeks afterward he complained of headache. When he came to me he had double choked disc and other manifestations of cerebellar tumor. An operation was done by Dr. Van Hook, an apparently gliomatous cyst being uncovered and scraped out. Unfortunately, the scrapings were lost, so that the confirmation of the pathologic condition was not made. The boy is still alive, entirely blind, but with no recurrence.

The other three patients died directly. But four recoveries out of seven give one reason to hope that the prognosis is not so bad in properly selected cases when operation is done early, as the larger statistics might indicate.

DR. JULIUS GRINKER, Chicago: I had an experience with a cerebellar tumor which I think is unique. A patient had been complaining of nervous symptoms for a year, had been sent from one physician to another, had been examined for ophthalmoscopic findings, and no abnormalities had been found. Her last physician was an ophthalmologist, who found the eyegrounds normal. He referred the patient to me. She was considered hysterical. When she first came to me I found no symptoms of tumor. She had been visiting me for a period of four weeks, when one day she entered my office presenting the typical cerebellar gait, complaining of vertigo and nausea; she barely opened the door, when she staggered and almost fell to the floor. She said: "I am so dizzy; I just got dizzy crossing the street-car tracks." I examined her fundus and found a typical choked disc. My diagnosis was cerebellar tumor. Two weeks later she was operated on, when a large irremovable cerebellar tumor was found. The patient did not

recover. Here was a patient who probably suffered from cerebellar tumor for over a year without discoverable symptoms.

Another interesting case that I might mention here is one of a tumor at the cerebello-pontile angle, diagnosed as a case of neurasthenia by a very good neurologist, until his brother, also a doctor, brought the patient to me and told me that he suspected tumor. At that time some new symptoms had developed, deafness, tinnitus aurium, difficulty in vision, patient almost blind, and I diagnosed it as a case of tumor in the left cerebello-pontile angle. Several surgeons tried to find it, but did not succeed. The patient was taken to Baltimore and Dr. Harvey Cushing found a small fibroma in the left cerebello-pontile angle. In the meantime, the boy had become blind. This case emphasizes the importance of diagnosing and localizing tumor when blindness is not complete; when the latter has occurred operation can not preserve vision. The boy made a perfect recovery, but his vision will never return. How different the result might have been if operation had been performed before blindness had occurred!

THE MEATO-MASTOID OPERATION IN CHRONIC MASTOIDITIS.

THE TECHNIC, RATIONALE AND INDICATIONS.*

WILLIAM LINCOLN BALLENGER, M.D.
CHICAGO.

To Heath belongs the credit of attracting wide attention to a mode of operative technic which promises to supplant the radical operation in a considerable number of cases. The operations devised by Wolfe, Stacke, Körner and Heath are not identical, though they are in general similar.

I have called the operation as performed by me, the meato-mastoid operation, as it consists (a) in the removal of the posterior wall of the bony meatus as deep as the annulus tympanicus, and (b) the complete exenteration of the mastoid cells. The remnants of the membrana tympani and the ossicles are not disturbed (Fig. 1).

The technic is indicated in column two of the Comparative Table of Technic.

SPECIAL POINTS OF TECHNIC WHICH LARGELY INFLUENCE THE SUCCESS OF THE MEATO-MASTOID OPERATION.

The points to which attention is called, are: (1) The complete exenteration of the pneumatic cells in the temporal bone. (2) Shall the walls of the bony wound be left rough, or shall they be made smooth? (3) The plastic meatal skin flaps. (4) The drainage dressing.

(1) *The Exenteration of the Pneumatic Cells of the Temporal Bone.*—I have more than once heard the statement that no operator can positively say that he has removed all the pneumatic spaces of the temporal bone. While this is perhaps literally true, practically it is not. In exceptional cases the cells are distributed over such a large area as almost to include the lateral half of the skull. A specimen in the possession of Dr. Ernest de Wolfe Wales presents the remarkable phenomenon of the apparent communication of the mastoid cells with the sphenoidal cells via the base of the skull, below and posterior to the petrous pyramid of the temporal bone. In such a case it would perhaps be impossible to exenterate all the pneumatic cells. The surgeon may know, however, when he has removed all the cells in the mastoid process, the zygomatic root and the squamous plate. It is somewhat more difficult to locate the cells when they are anterior to the meatus. In such cases they are usually also present in the zygomatic root, and if the zygomatic cells are carefully exposed in a forward direction those in the region anterior and superior to the bony meatus will be exposed to view and exenteration.

Having suggested the possible anatomic distribution of the cells, the question of the necessity for their complete removal remains to be discussed. The chief object of their removal is to establish free drainage and ventilation. If these purposes can be accomplished without a complete exenteration, the tissues may gradually assume their normal condition and a cure result. Unfortunately the ostia between the cells are often small and may prevent such a happy result.

In the first place, the channels or ostia of communication between the cells are often so small that the least swelling of the mucous membrane completely blocks them. In the second place the remote cells are often the seat of infective granulation tissue which still further obstructs

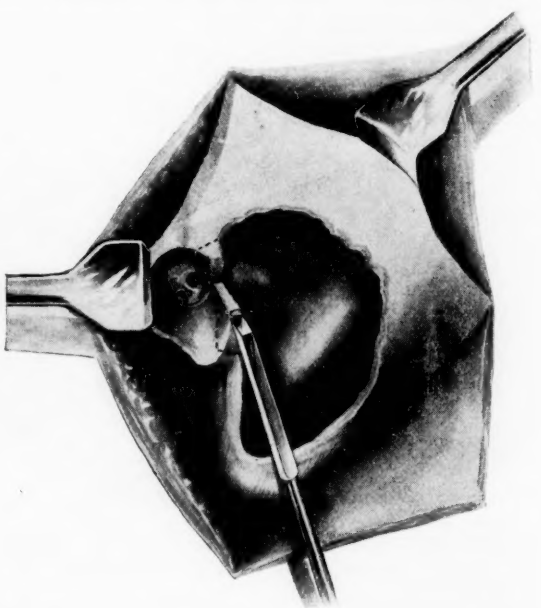

Fig. 1.—The complete exenteration of the mastoid cells. In the meato-mastoid operation the posterior wall of the meatus should be removed down to the annulus tympanicus as shown by the dotted lines.

the drainage and ventilation. If the cells are not fully exposed and exenterated they will continue to discharge purulent secretions into the mastoid wound for an indefinite period. I recall a few cases in which such a discharge persisted from beneath the upper plastic meatal skin flap and have no doubt that it came from the zygomatic cells.

(2) *Shall the Walls of the Bony Wound Be Left Rough or Shall They Be Made Smooth?*—Another reason for the complete exenteration of the mastoid cells is that in many of the cases of chronic mastoiditis the bone is dense and sclerosed, and the nutrient blood vessels are small. The vitality is low and the process of regeneration by granulation tissue is imperfectly performed. The low vitality predisposes the new granulation tissue to infection, and exuberant granulations. It becomes necessary, therefore, to adopt measures that will provide better nutrition to the granulation tissue. The most feasible way is to reflect the plastic meatal skin

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. The article is here abbreviated by the omission of the comparative table of technic and part of the pictures. The complete article appears in the Transactions of the Section

flaps into the mastoid wound. They are richly supplied with blood vessels which rapidly extend into the new granulation tissue covering the mastoid walls. The granulation tissue is thus abundantly supplied with nutrition, and the process of repair is completed with but little or no exuberant granulations. The mastoid wound should be rendered comparatively smooth as the plastic skin flaps are reflected on its surface. If the flaps are reflected over uncapped or half removed cells, infective foci remain beneath it, and, the drainage and ventilation being blocked, the suppurative process continues beneath the flaps. This not only prevents the union of the flaps with the mastoid wall, but it also measurably interferes with the reparative process in the uncovered portion of the mastoid walls. The portion of the wound not covered with the plastic meatal flaps should also be made comparatively smooth for two reasons; first the blood supply is inadequate (in sclerosed bone) to support healthy or vigorous granulations, hence any bony recesses left may become foci of infection and thus interfere with the process of repair.

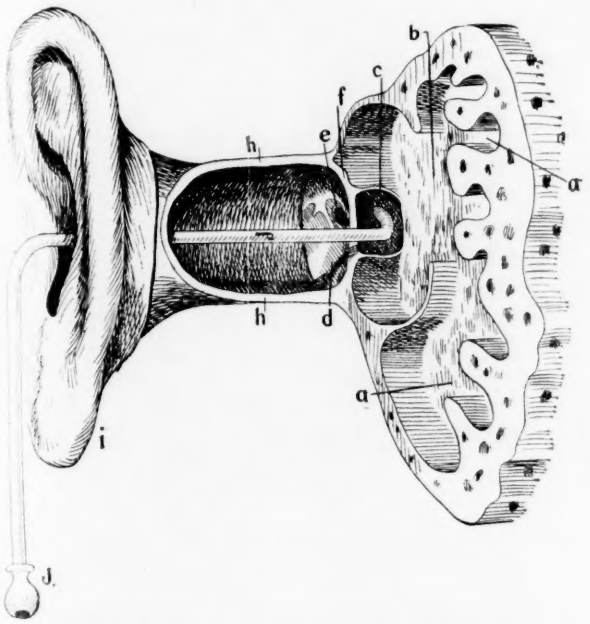

Fig. 4.—Schema showing the method of introducing the canula into the aditus ad antrum during the after treatment of the meato-mastoid operation. a, a, mastoid cells; b, mastoid antrum; c, aditus ad antrum; d, membrana tympani; e, perforation in the membrana tympani; f, annulus tympanicus; h, h, opening in the posterior wall of the meatus; i, auricle; j, j, silver canula.

In all cases in which the bone is sclerosed or eburnized the walls of the bony wound should be made smooth with the curette and burr (Fig. 2). In those cases in which the bone is well supplied with blood this procedure is not essential.

(3) *The Plastic Meatal Skin Flaps.*—The proper use of plastic meatal skin flaps exerts a decided beneficial effect on the speed and certainty of the cure. In other words I believe that in a given case, all other points of technic being equal, the recovery will take place more quickly and certainly if properly formed and adjusted skin flaps are reflected into the mastoid wound *via* the window in the posterior wall of the meatus, than it will if plastic flaps are not used, or if used, are improperly adjusted. I also believe that improperly adjusted flaps are worse than no flaps. One operator told me that he often made the Trautmann tongue flap and then cut it off, as he had considerable trouble with it when the dressings were removed. That is, the deeper end became detached, and if it was not removed, caused a stricture in the region of the aditus ad antrum (in the radical operation). The same objection applies to any other plastic flap. The main question is, how may the plastic flap be adjusted and anchored permanently in the proper position? I have used the Ballance flaps in a large number of cases during the past five years with increasing satisfaction and success, and inasmuch as a number of my colleagues have expressed a disappointment in their plastic work, I am encouraged to describe my method of procedure.

While I use the Ballance incision and flaps I do not anchor them as he does. My technic is as follows: (a) Having lifted the cutaneous meatus from the external auditory canal, the fibrous, muscular and fatty tissue is removed from its posterior wall with strong curved scissors (Fig. 5). The posterior wall of the concha is likewise freed from the same kind of tissue. This is done to render the flaps as thin as possible so that when they are reflected through the window in the posterior wall of the meatus they will occupy but little space. The removal of the redundant tissue also insures speedy union with the bony walls over which the flaps are reflected. The fibrous tissue on the posterior wall of the meatus and concha has low regenerative powers and is easily infected. Should it be left on the flaps and become infected prolonged suppuration would ensue. When it is removed, and only skin is left, rapid union with the bony tissue takes place without the danger of suppuration between flaps and bony walls. I therefore urge that this step of the technic be observed, as I believe it is essential to the best success.

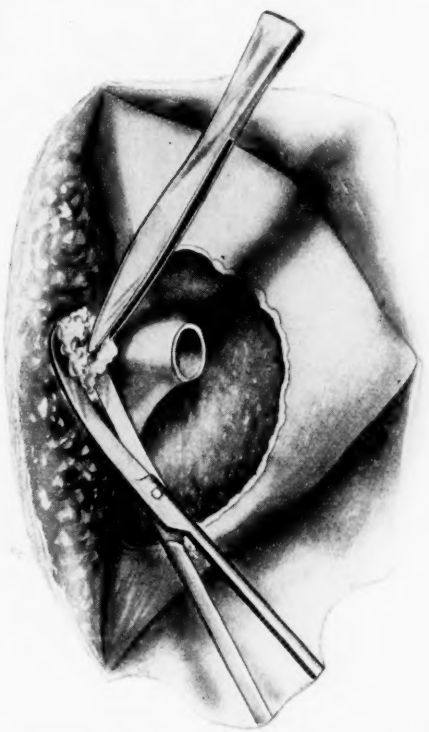

Fig. 5.—Removal of the redundant tissue from the posterior wall of the meatus and concha preparatory to making the Ballance incision.

(b) Introduce the divulsion forceps into the cutaneous meatus in such a position that the prongs will open at the posterior inferior portion of the tube (Fig. 6), as the incision should be made in this segment of it.

The prongs should then be spread apart to render the tissues tense preparatory to making the incision.

(c) The meatal or straight portion of the incision should be made with a small scalpel beginning at the inner end of the meatus and extended to the concha (Fig. 7).

(d) The ear should be placed in its normal position in the mastoid wound and the conchal or curved portion of the incision completed with the scalpel (Fig. 7).

(e) The cartilage on the conchal portion of the flap should be dissected from it, and any remaining redundant tissue removed from the meatal flaps to render them as thin and pliable as possible. Tension should be made on them in the direction toward which they are to be retracted in the wound to ascertain whether they are entirely free, as it is necessary to carry them into the wound as far as possible. If they are still bound by tissue attachments these should be overcome by incision or the removal of more redundant tissue.

(f) Introduce the tension or anchor sutures into the plastic flaps as shown in Figure 8. Usually two are required in the upper flap, one in the conchal and one in the meatal portion. One suture is enough for the shorter lower flap.

(g) Replace the auricle in its natural position and exert tension on the conchal suture to determine where it will be necessary to anchor it to the skin posterior to the postauricular incision, in order to retract that portion of the flap against the upper or cranial wall of the mastoid bony wound. Then pass the needle beneath the skin for a distance of three-quarters of an inch and bring it out through the skin at this point (Fig. 9). Next make tension on the suture in the meatal portion of the upper plastic flap and determine the point of anchorage required to bring it into the upper part of the wound. Finally make tension on the sutures in the lower plastic flap and determine the point of anchorage required to bring it over the facial ridge. Each suture should pass through the skin three-quarters of an inch posterior to the primary mastoid incision as shown in Figure 9. The other end of each suture should pass out through the postauricular incision. Catch the two ends of each tension suture with artery forceps or tie them loosely until the postauricular incision is closed.

(h) Close the postauricular incision as usual, carefully placing each loose end of the tension suture in lines parallel with the end passing through the skin.

(i) Tie the tension sutures over small roller bandages (Fig. 10), carefully noting through the enlarged meatal opening in the concha the position of the plastic flaps, and when they have assumed the proper position in the wound cease making tension. Tie them in the order mentioned in section (g).

The tension sutures serve two purposes: (1) They hold the plastic flaps in position against the facial ridge and the upper or cranial wall of the mastoid bony wound until they become firmly adherent. The rich blood supply from the flaps insures rapid extension of healthy granulations over the mastoid wound. (2) They lift the auricle upward and partially restore it to its normal position. Without the sutures in the upper plastic flap the auricle droops about one-half inch below its normal position.

I wish to reiterate what I have already said, namely, that the proper use and adjustment of the plastic meatal flaps is one of the most important points of technic in the surgery of chronic sclerosing mastoiditis, as the sclerosed bone is inadequately supplied with nutrient blood vessels to support rapidly growing healthy granulation tissue. The plastic skin flaps supply the necessary nutrition, granulation and epidermization often being complete in from two to six weeks. If this method of adjusting the plastic flaps is used it will rarely be necessary to use Thiersch grafts except, perhaps, in the tuberculous cases.

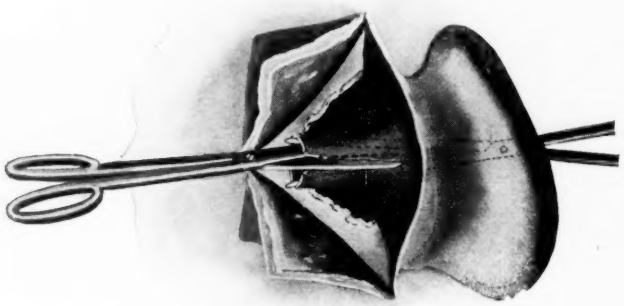

Fig. 6.—The meatus put on a tension with divulsion forceps while the incision is being made.

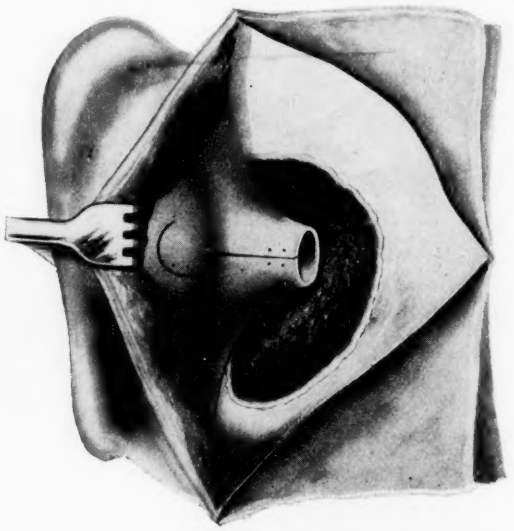

Fig. 7.—The Ballance incision in the posterior inferior wall of the skin meatus and the concha.

(4) *The Drainage Dressing.*—A distinction should be made between the drainage dressing and the external or absorbent dressing. The drainage dressing is for one purpose only, namely, to carry the secretions from the mastoid wound as fast as they form. The external dressing is for two purposes, namely, to absorb the secretions carried to it by the drainage dressing, and to protect the wound from extraneous pathogenic bacteria.

If the wound is either tightly or loosely packed with gauze the secretions saturate it and are constantly in contact with the reparative granulation tissue. This not only subjects it to chemical and mechanical irritation, but also to infection, as evidenced by exuberant granulations. When the gauze is removed the granulation tissue is also more or less injured.

If, on the contrary, the drainage dressing consists of a small wick of gauze within a rubber tube, the granulation tissue is but little disturbed by its removal. Furthermore, the granulating bony walls of the wound are not bathed in the secretions as the drainage dressing

is only in contact with the most dependent portion of the wound. The secretions gravitate to the bottom of the wound where they are taken up by the wick of drainage gauze and carried outward to the external absorbent dressing. I have used this form of dressing for nearly two years and have noted decidedly better results. During the same period I have also improved my technic in the use of the plastic meatal skin flaps, and ascribe some of the improvement to that fact. It stands to reason, however, that the drainage dressing should only be large enough, or have the capacity, to carry the secretions away as fast as they are formed. If, however, the drainage dressing completely fills the wound it will become saturated before it will carry the secretions to the external or absorbent dressing. While it ultimately drains the secretions it primarily causes their retention in the wound.

As the first and fundamental law pertaining to the relief of infection of suppurating cavities is free drainage it is obvious that failure (in any degree) to secure it will hinder the process of repair somewhat in proportion to the degree of failure. This being true the drainage gauze or tube should be in contact with the most dependent portion of the cavity while the capacity of the wick should only be great enough to carry away

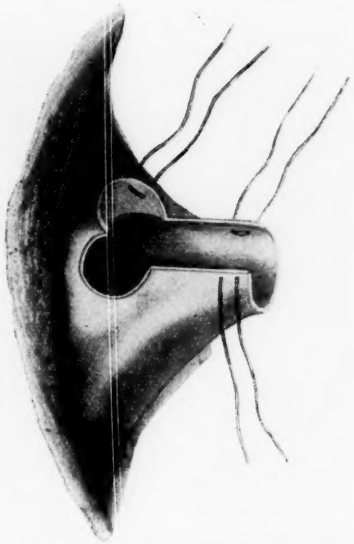

Fig. 8.—The anchor sutures in the meatal flaps.

all the secretions. If it is smaller than this it will not remove the secretions, whereas, if it is larger it retains the secretions within its meshes, at least to the point of saturation, after which it discharges them upon the external or absorbent dressing.

A small drainage wick removes the secretions, and maintains the granulation tissue at its maximum vitality and speedy healing follows.

A large drainage dressing which fills the wound becomes saturated with the morbid material, which constantly bathes the granulation tissue, macerates and infects it, and lowers its vitality. Exuberant granulations and tardy healing results.

As the middle ear is not exposed in the meato-mastoid operation provision should be made during the first week or ten days following the operation to facilitate its drainage. The Eustachian tube is still more or less blocked on account of its swollen mucous membrane, and if it can be given a few days in which to recuperate the swelling will subside, and its lumen increase in size, so that the secretions may be drained through it. Heath uses a silver canula so bent as to allow it to be introduced through the meatus and the window in its posterior wall, into the antral end of the aditus ad antrum (Figs. 3 and 4). A rubber hand bulb is attached to the proximal end of the canula and blasts of air are forced through the middle ear. By this means the secretions and small polypi are expelled from the middle ear through the perforation in the drumhead into the external auditory meatus. This procedure is repeated, daily until the aditus ad antrum becomes closed by granulation tissue.

At the end of this time the secretions will have diminished in quantity, and the lumen of the Eustachian tube will have increased in size, and drainage is thereafter adequately provided for. The conditions in the middle ear are more nearly normal, the infection and inflammation gradually subside, and the processes of repair go on to a favorable resolution. At the end of a few weeks or months the perforation in the drumhead becomes closed in some of the cases, while in others it remains open.

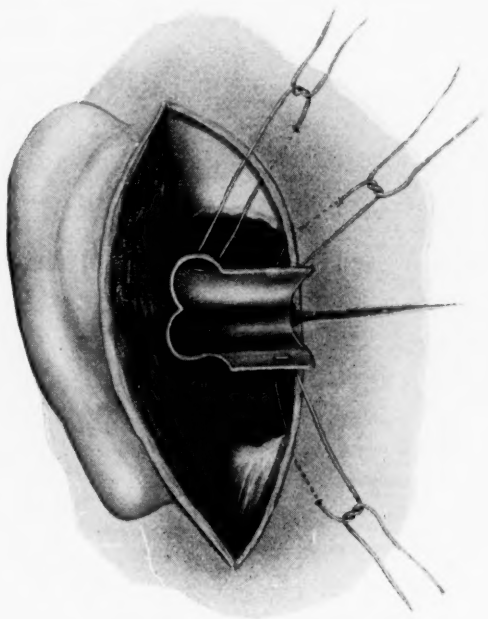

Fig. 9.—The anchor sutures in place.

THE RATIONALE.

The rationale of the meato-mastoid operation is based on the following principles:

(a) The promotion of healthy granulation tissue and epidermization of the walls of the mastoid wound. This is accomplished by making the surface of the bony wound smooth, and the proper adaption of the plastic meatal skin flaps to it.

(b) The establishment of ample drainage. This is accomplished by diverting the secretions from the mastoid antrum and cells through the window in the posterior wall of the meatus into the external auditory meatus and by passing blasts of air via the aditus ad antrum through the middle ear.

If the above conditions are established in properly selected cases of chronic mastoiditis the results will be as good as if the radical operation were performed, and in one respect they will be much better, namely, the hearing will be much improved, often approaching normal.

THE INDICATIONS FOR THE MEATO-MASTOID OPERATION.

It is too early to accurately forecast the exact indications for this operation, as only an extended experience will afford the data for such a forecast. There are, however, certain broad principles on which the indications may be tentatively based. In addition we may revert to our small experience as a guide in formulating the indications.

Based on the therapeutic indications, chronic mastoiditis may be divided into three classes, namely, (1) Those amenable to non-operative treatment, or to surgical treatment through the perforate drumhead, to the vault of the pharynx, and to the nose. (2) Those amenable to the meato-mastoid operation. (3) Those only amenable to the radical mastoid operation.

(1) *The Cases Amenable to Non-surgical Treatment or to Minor Surgical Procedures.*—These are usually characterized by a central (non-marginal) perforation (Fig. 11, a, b, c) and the absence of necrosis of the walls of the tympanum and mastoid antrum and cells.

Many of these cases are amenable to simple treatment addressed to the tympanic cavity and Eustachian tube. Indeed, most of them are directly due to infection and inflammation of the Eustachian tube and can only be overcome by curing the pathologic process in the tube. The question naturally arises, as to the cause of the continued infection of the tube. Is it due to some peculiarity of the tube or to some pathologic process in some of the contiguous structures? In my opinion it is usually due to a pathologic process in one or more of the contiguous structures, as the lymphoid tissue in the epipharynx, and the posterior ethmoidal and sphenoidal sinuses. The presence of adenoids is almost always attended by more or less infection and inflammation (epipharyngitis) which extends by continuity of tissue and by direct infection to the Eustachian tube. Adenoids or their remnants are often present in adults, as any one who has made many examinations of this region can testify.

It is obvious, therefore, that the therapeutic indication in such cases is first to remove the infected lymphoid tissue from the epipharynx, and then to irrigate the Eustachian tube and tympanic cavity before deciding on the necessity for a mastoid operation. In other cases, the presence of a chronic infection and inflammation of the posterior ethmoidal and the sphenoidal sinuses will perpetuate an infection and inflammation of the Eustachian tube, middle ear, and mastoid cells. In either of the above conditions, the first therapeutic indication is to remedy the epipharyngeal or the nasal disease before attempting to cure the aural disease by a mastoid operation. Having overcome the infection of the epipharynx and the accessory nasal sinuses the Eustachian tube may be irrigated through a Weber-Liel catheter, and drainage promoted through the external auditory meatus by dry gauze wicks as suggested by Spencer of St. Louis in the early eighties, or by such other local treatment as may be deemed best. Should these cases resist these and other simple therapeutic measures they may be successfully cured by the meato-mastoid operation, and the hearing restored to near the normal.

(2) As a general proposition it may be stated that the meato-mastoid operation is indicated in all cases in which simpler measures have failed, and in which the operation will establish adequate and permanent drainage, and remove the morbid material.

Conversely it may be stated that the meato-mastoid operation is contraindicated in those cases in which it will fail to establish adequate and permanent drainage, and remove the morbid material. In the later class of cases the radical mastoid operation is indicated.

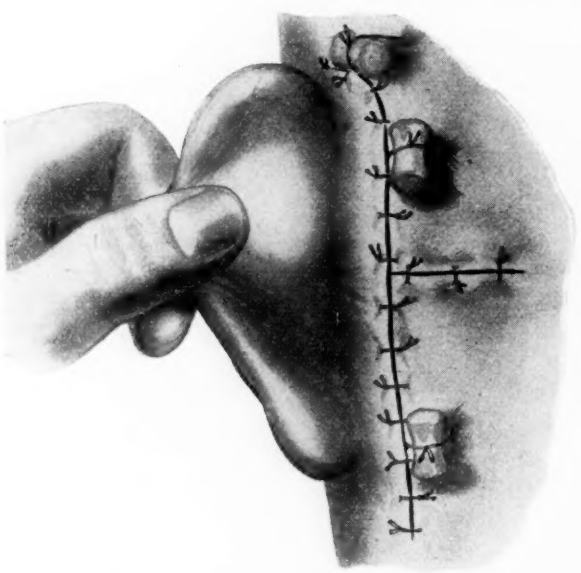

Fig. 10.—The skin and anchor sutures.

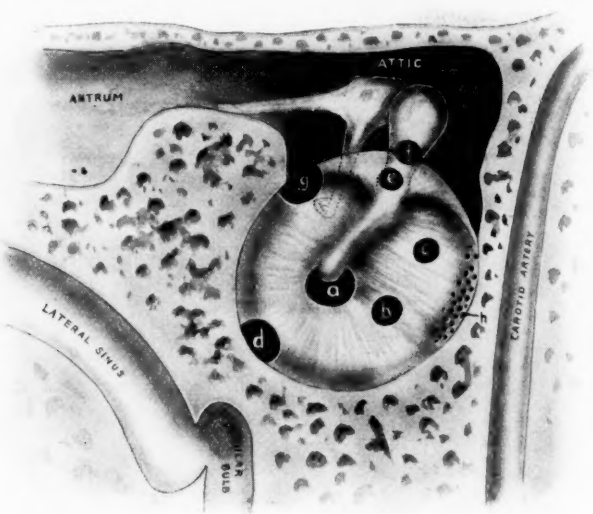

Fig. 11.—Schema showing the significance of variously located perforations of the membrana tympani: a, b and c, Central perforations, usually denoting infection of the Eustachian tube; d, e, f, g, marginal perforations, usually denoting necrosis of the contiguous bony tissue.

The indications according to the above propositions are to be found in the answer to the following question:

Under what conditions will the meato-mastoid operation establish adequate and permanent drainage and remove the morbid material?

Before answering this query it is necessary to define what is meant by (a) adequate and permanent drainage and by (b) the removal of the morbid material.

(a) Adequate drainage consists in the removal of the secretions as rapidly as they are formed. Inadequate drainage is present when for any reason the secretions are retained in sufficient quantity, and for a long enough period of time, to cause undue pressure, and to undergo decomposition. According to a well-established law in pathology, adequate (free) drainage raises the vital re

sistance of the involved tissues and favors the disappearance of the infection and inflammation; that is, if the process of repair is established. Conversely, inadequate drainage lowers the resistance of the tissues and favors the perpetuation of the infection and inflammation and prevents the successful establishment of the process of repair.

(b) The morbid material may be a purulent or other abnormal secretion, or it may be cholesteatomatous material or necrotic bone.

In simple otitis media and mastoiditis (without necrosis or other complications) with a central perforation of the drumhead, adequate drainage and the removal of the morbid material may often be accomplished without surgical intervention. The morbid material in these cases is the purulent or mucopurulent secretion. The use of cotton-tipped applicators, the Eustachian air douche, and sterile gauze in the meatus in the interims between treatments is often the only treatment necessary. If the perforation is small it should be enlarged by incision to facilitate the drainage of the secretions (morbid material). In other cases in which the infection is perpetuated by an obstruction at the floor of the attic (the aditus ad antrum being open) the removal of the malleus and incus will effect a cure. Even when small granulations are present in the attic, faithful and intelligent treatment through the meatus and Eustachian tube sometimes effects a cure. In the type of cases referred to in this paragraph the infection and inflammation are often perpetuated by epipharyngitis, adenoids, and posterior ethmoidal and sphenoidal sinuitis. Appropriate therapeutic measures addressed to these conditions, together with simple treatment of the middle ear, will often effect a cure.

If cases of the above type resist the treatment suggested, they may be subjected to the meato-mastoid operation with almost certain success. By this operation the secretions from the mastoid antrum and cells are diverted through the window in the posterior wall of the meatus, into the meatus. The secretions from the middle ear escape through the Eustachian tube and the perforation in the drumhead. By this division of labor the secretions are adequately drained, the resistance of the tissues raised, and the process of repair permanently established. Even when superficial necrosis of the ossicles and tympanic walls are present complete healing may occur. Many cases are on record in which large sequestra of bone were removed and healing followed without a mastoid operation. It is possible, therefore, that by improving the drainage by the meato-mastoid operation an extensive necrotic process within the middle ear may heal out, though in such cases I would recommend a radical mastoid operation.

In those cases in which the necrotic process is limited to the mastoid antrum and cells, the meato-mastoid operation is indicated. Such cases have frequently occurred in my practice as well as in that of others. Even should there be some necrosis in the tympanum the removal of the antral and mastoid disease and the diversion of the secretions to the external meatus, greatly favor the subsidence of the infection, and accelerate the process of repair.

That the operation will as favorably influence more extensive diseased processes in the tympanic cavity I do not claim, indeed, I doubt it. Only time and the combined experience of a large number of operators can determine this fact.

(3) If grave complications, such as thrombosis of the lateral sinus perforation of the tegmen antri, and an epidural or brain abscess, having its atrium of infection through the tegmen antri, are present, it is probable that the meato-mastoid operation will effect a favorable termination, provided, of course, that the complications are treated in the usual manner. In such conditions the operator should be guided by the symptom-complex present in each case. If, for example, there is a marginal perforation over the short process of the malleus it is probable that there is necrosis of the tegmen tympani. With such an indication I would advise the radical operation. If, however, the perforation is at the margin of the posterior superior segment of the drumhead the meato-mastoid operation may be tentatively performed, as a perforation in this region is significant of necrosis in the mastoid antrum, rather than of the tympanic cavity. The meato-mastoid operation would, therefore, establish adequate drainage and remove the morbid material and would probably effect a cure, i. e., a regeneration of the remaining diseased tissues.

THE CONTRAINDICATIONS TO THE MEATO-MASTOID OPERATION.

(a) All simple cases, cases curable by non-surgical and minor surgical treatment through the external meatus.

(b) All cases curable by the proper surgical attention to the epipharynx and the posterior ethmoidal and sphenoidal sinuses.

(c) Cholesteatoma of the tympanic cavity. The removal of the cholesteatoma from the tympanic cavity would dislocate the ossicles, and if this is done the radical mastoid operation should be performed as the chief object, the meato-mastoid operation, is defeated by the dislocation of the ossicles, namely, the preservation and improvement of the hearing.

(d) Epidural abscess with its atrium of infection through the tegmen tympani. It is obvious that in order adequately to drain an epidural abscess in this region the tympanic cavity should be exposed to give access to the atrium of infection which should be enlarged.

(e) Brain abscess with the atrium of infection through the tegmen tympani is a contraindication to the meato-mastoid operation for obvious reasons.

(f) Infection, suppuration, and necrosis of the labyrinth is a contraindication to the meato-mastoid operation as the affected portions of the labyrinth should be exposed to inspection and if necessary to surgical treatment.

The conditions referred to in paragraphs c, d, e and f call for the radical operation, as only by this method of exposure is adequate drainage and the removal of the morbid material certainly established.

It is true that the radical operation will cure all the conditions in which simple conservative treatment, minor surgical procedures, and the meato-mastoid operation are alleged to be indicated. It is also true that they may be cured in many cases by less radical procedures, hence the less radical procedures should be tried when there is a probability of a cure by them. Furthermore, the less radical measures preserve and often greatly improve the hearing even to the point of almost normal hearing. The radical operation, on the contrary often results in great impairment of the hearing, and, therefore, should only be used when the other methods of treatment have failed, or, for obvious reasons must fail, because by them adequate drainage and the removal of the morbid material can not be effected.

103 State Street.

DISCUSSION.

DR. JANSEN, Berlin: Ballenger's method is an old operation newly but not well named. Many years ago I recommended this operation in acute suppurations in which a long after-treatment could be foreseen: for instance in scarlet fever. Other surgeons performed this operation when they did not consider a radical operation necessary, or did not feel competent to perform the radical operation. In general, I believe that fully as much can be accomplished with the simple mastoid operation: with the open method (as we employ it in the after-treatment) and frequent changing of the dressings, free drainage is obtained. I mean that when one had proceeded as far as the lateral wall of the attic the question of the hearing comes into consideration, in chronic cases, before doing a complete radical operation. In cases in which the question of hearing was considered, I employed this method—that is, a radical mastoid operation which was not carried to completion. I believe this method to be especially indicated when the operator does not feel that he can perform the radical operation with preservation of the ossicles, without dislocating the incus. In 1893 I described this method—that is, the radical operation with conservation of the ossicles and drum membrane, as well as the removal of the outer attic wall and the exposure of the posterior and inferior tympanic cavities. Since then this method has been employed in about 200 cases with very satisfactory results in the majority, that is with healing and conservation of the hearing. Also in cases of cholesteatoma this method can often be employed, that is, when the cholesteatoma is situated in the outer portion of the attic, where it begins to develop. Dr. Ballenger justly lays great stress on the obliteration of all pockets. This is necessary in all operations on the mastoid. He, however, does not refer to the most important cavities, namely, the retrolabyrinthine and the perilabyrinthine cells. While the other diploetic cells are easily found, these perilabyrinthine and retrolabyrinthine cells must be hunted for. If not found, they frequently lead to osteomyelitic suppurations of the pyramid and to meningitis. For their radical exposure, I regard the burr as indispensable. It is not advisable to apply Thiersch grafts primarily in cases of tuberculosis. Every dressing irritates. I pack the gauze in the external auditory canal very loosely; often do not employ any packing.

DR. ALBERT H. ANDREWS, Chicago: In a number of cases of acute and subacute mastoiditis, or mastoid abscess, I have employed the meatomastoid method merely as an experiment to see if it would not give quicker results than the old method of open operation; and while I have not used it in more than a dozen cases belonging to this class I think that my cases healed a little quicker than if I had finished the operation after the old method of open packing. I am not ready to recommend it as the best and only method of handling these cases, but in view of the results in the cases in which I have used this, though only as an experiment, I have been well pleased with it.

DR. J. W. MURPHY, Cincinnati: I have no doubt that in some selected cases this operation described by Dr. Ballenger has a very distinct place, especially in those chronic cases in which the ear is so filled with granulation tissue and old chronic discharge, possibly of years' duration, such as we frequently meet following the diseases of childhood, scarlet fever, for instance, and in which the ear is so full of granulations that it is impossible to tell whether the bones are intact or not, but there is great destruction of the drum membrane. In these cases if the radical operation is done, it is not certain that, after healing has occurred and cicatricial tissue has formed in the middle ear, the hearing will not be much interfered with. However, if Dr. Ballenger's operation is done in these cases, what hearing the patient possesses will be retained, and in many cases it will be found that great improvement has occurred after operation, as by this method perfect drainage may be obtained. The discharge will cease and the patient will frequently have very good hearing. I have done this operation since hearing Dr. Ballenger describe this method. I operated the following day on a young woman 20 years of age who had always refused operation for fear of scarring, and also for fear that the little hearing she had would be decreased. Not a particle of hair was removed from her head. She had always refused to have the head shaved, so I fastened a cap tight around the head and it was pulled back so as to give ample room for the operation. After the operation the posterior wound was closed, a simple gauze wick inserted into the ear for drainage, and in one week's time I had primary union and the discharge had almost ceased. I saw this patient the day before I left home. There wasn't a particle of discharge in the ear; hearing for the watch was about 12/40, and for ordinary conversation with the face turned away, across the room, fifteen or twenty feet. The patient could hear and repeat every word. So in this case a useful ear resulted and as no scarring will occur within this middle ear there is every reason to believe it is going to remain a useful ear.

DR. D. T. VAIL, Cincinnati: Dr. Wendell Phillips of New York addressed the Oto-Laryngologic section of the Ohio State Medical Society at its recent meeting at Columbus on the present status of the mastoid operation as a cure for chronic suppurative otitis media, but made no mention of the meatomastoid operation. In the discussion I asked him if this operation had a place in mastoid surgery. He said that he knew nothing about it from personal experience, but had formed an unfavorable opinion from reports. Dr. McKernon of New York, at a recent meeting of the Laryngological, Rhinological and Otological Society at Pittsburg, in speaking of the dangers of the radical operation, said that 2 or 3 per cent. of the patients died on the table or soon after, either from the anesthetic narcosis or from some accident in the operation, such as plunging into the cerebral fossa or lateral sinus or from some other accident. He said that, though the statistics were suppressed, from 6 to 15 per cent. of the patients had facial paralysis and that from 25 to 45 per cent. of them had recurrent attacks of suppuration, requiring a later operation. In discussion it was said that one patient had had eleven operations for recurrent mastoiditis and was still uncured.

The question is whether this operation which Dr. Ballenger has revised and perfected will not do away with at least some of these dangers. This operation will to a certain extent guard the patient against facial nerve paralysis. With this operation, in my opinion, the present large percentage—25 to 45 per cent.—of recurrences will not take place, for the reason that the middle ear is amenable to local treatment. There is epidermatization of the middle ear, and because this important region is not disturbed and the débris can be cleaned out by the other methods which Dr. Ballenger did not speak of, but which is part of this treatment, the patients have the chance of avoiding recurrences, and the shortening of the length of time of the operation will guard the patient to a certain extent against fatal termination during or after the operation.

DR. C. F. WELTY, San Francisco: The operations described by Dr. Heath and Dr. Ballenger are identical, and very easy to do. The operation described by Dr. Jansen is entirely different and requires most careful technical work; at the same time it is much more complete. If Dr. Jansen has given up this operation, which I consider superior to the Heath operation, I can not see that the Heath operation should be entitled to a place at all. Some time since, otologists as a class, have given up the removal of the ossicles for chronic suppuraton. They have also given up the Stacke operation for chronic suppuration, and the reason for this is that some of their cases remained uncured, while with the radical operation, practically all recovered. In a recent publication by Heath, he lays particular stress on the impairment of hearing. It is a well-known fact that practically all patients with chronic suppuration have a decided impairment of hearing. This impairment is due largely to the adhesive changes that have taken place as the result of the chronic irritation, and so long as such adhesions are not removed, the hearing will remain about the same. Those patients that have improved hearing following the Heath operation depend for their improvement on the mechanical removement of the pus and epidermis, which impede the sound waves. Kerner says that hearing is always benefited following the radical mastoid operations, except in those cases in which there is a labyrinthine disease to start with. I have had but two cases in which the hearing was made worse, and in these cases prior to operation the patient heard

a whisper at twenty feet. It is unusual to hear so well. A very small percentage of patients are made worse by the radical operation. About half remain the same, and the remaining have improvement dependent altogether on the amount of cicatricial tissue that covers the stapes, that is, provided that the labyrinth is intact. I have had two cases in which the hearing improved from a whisper at three feet prior to operation to twenty feet following the operation. I consider this a very good result.

Dr. Vail is entirely wrong regarding mortality. I consider the radical mastoid operation one of the greatest achievements in surgery, because it avoids the possibility of death by cerebral complications and because it is attended with such a small mortality, probably not more than 0.5 per cent, and I am led to believe with Niemann of the Politzer clinic that this slight mortality is entirely dependent on unrecognized suppurative affections of the labyrinth. If not too anxious to do a beautiful operation one need not fear facial paralysis.

DR. NORVAL H. PIERCE, Chicago: Küster attempted to thrash out this whole thing when he published his paper in the *Deutsche Medicinische Wochenschrift* in 1889. His object was to establish a principle in the treatment of suppurating cavities having non-collapsible walls—the antrum of Highmore, the pleuritic cavity and the mastoid and middle ear. Up to this time Wolff was perhaps the first to suggest a scientific operation for opening the mastoid cells, and he was followed by Schwartze, who more fully developed the idea, and who with the enormous amount of material at his command has done so much to place the surgery of the temporal bone on a sound basis. Schwartze operated in chronic and acute cases alike by his method, removing the diseased area from the mastoid and leaving the cavum intact. In a certain number of cases of chronic disease suppuration persisted, but in many chronic cases cure was effected by this method. To reduce the number of persisted cases and to shorten the after-treatment Küster not only removed the diseased bone within the mastoid, but cleaned out the contents of the cavum as well when they were diseased. He had difficulty in differentiating between suppuration limited to the mastoid cells and suppuration limited to the epitympanic space and the cavum tympani. I think that these are the principles governing the whole matter. If before operation it can be established that the cause of the suppuration is entirely limited to the mastoid cells, this operation first advocated by Jansen will have just as many recoveries as Schwartze's operation; I scarcely think many more. What Dr. Jansen thinks of the operation may be gained from the fact that he has performed literally thousands of the radical operation and less than 200 of the other. I have done this operation in cholesteatoma with a small marginal perforation, retention of the tympanic membrane and ossicles with very good hearing power; and that is the very kind of a case in which Bezold recommends the operation. Two years after the operation, as far as the mastoid cells are concerned there is a cure. The cavity is quite dry, covered with epithelium. A small pin-head perforation remains in Shrapnell's membrane, however, and out of the epitympanic space, (because the aditus has been preserved) there once in awhile rolls a clump of cholesteatoma, together with a putrid discharge. This patient is not cured after two years, I think. To-day I heard from the clinic at the Illinois Eye and Ear Infirmary that the next to the last patient, operated on six months ago, is back with great pain and swelling back of the ear. There will be many more relapses in this operation than after the radical. Now, as regards hearing, because that is the only thing that recommends the operation, can we say we shall have better hearing after two or three years from this operation than from the radical operation? I am doubtful. What good are the ossicles if they are necrotic or bound down by adhesions between the promontory and the long process of the incus or the handle of the malleus? I think that they are rather a detriment than otherwise. Indeed, it is for just such conditions that ossiculectomy has been advised for the purpose of increasing audition.

DR. J. HOLINGER, Chicago: As I understand it, this operation is indicated in chronic suppurations without cholesteatoma. In these cases I have operated any number of times simply by the old Schwartze method, often removing sequesters, cleaning out all the cells and allowing the whole wound to fill in with granulations; in two or three weeks I see complete recovery, stopping of the suppuration and normal hearing. This operation answers the same purpose as the one described by Dr. Ballenger.

I think I assisted at the first radical mastoid operation in which Thiersch's grafts were made, in the spring of 1891. At that time the grafts were put in, about ten days after the first operation, on a granulating surface. Does Dr. Jansen always graft directly on denuded bone? Does he use the burr on such bone? I have never tried it, but I understand from other operators that in using the burr the superficial layer of the bone is seared and granulations do not come up as fast as in using the chisel. Will Thiersch's grafts in such instances attach and grow as well as on a granulating surface?

For the last ten years I have not used any grafts at all, but allowed the cavity to granulate and afterward obtained a smooth granulating surface by using nitrate of silver salves of different concentrations. Afterward I simply apply vioform powder without any dressing whatever. I speak of the radical operation, in which the wound behind the ear is sewed shut at the operation and the after-treatment is performed through the external meatus.

DR. A. JANSEN, Berlin: This method, in my opinion, does not in general come into consideration when dealing with acute cases. In acute cases healing is much more rapid when the simple mastoid is performed and closed, primarily after Zaufall's method; healing occurs in from ten to eighteen days. Dr. Pierce has correctly given the history of the newer methods, and his given Küster due credit. It was also Küster who stated that a method that required two years to bring about a healing (as was the case in the Schwartze operation in chronic cases) could not be classed as a practical one. My experience allows me to make the assertion that in cases in which the ossicles were preserved good hearing was retained, while, on the other hand, the hearing was often made worse when the ossicles were removed. The diminution in the hearing was often so marked that the disappointment of my patients was very perceptible to me. I repeat that the radical operation without the removal of the ossicles is my discovery and should, therefore, not be attributed to Heath. Since 1893 I have taught this operation in my courses. I usually apply Thiersch grafts immediately, or at the first dressing, in order to obtain healing in the shortest time possible. I have had cases in which healing took place in less than three weeks. The burr has never caused necrosis or a retarding of the healing. I never allow the burr to become overheated.

DR. WILLIAM E. SAUER, St. Louis: I think that Heath made the claim that there was marked improvement in the hearing even when the incus was absent in these cases. Professor Jansen made the point that the operation had no special value when the connection between the incus and the stapes was lost.

DR. WILLIAM L. BALLENGER, Chicago: It might be appropriate to turn the men who originated this operation loose in a pen and let them decide it. Dr. Jansen declares that he is one of the earliest. There are others who assert that they have done it a little earlier than he. We are all glad to know that the value of the operation was recognized a long time ago. Dr. Jansen did not find the improvement in the hearing that is claimed by Dr. Heath.

PROF. A. JANSEN, Berlin: I have performed the operation to conserve, not to improve, the hearing, and I have found that I could improve bad hearing. The only indication in this operation is from the standpoint of good hearing, naturally. I have done nearly two hundred operations and in the majority of cases preserved good hearing.

DR. WILLIAM L. BALLENGER, Chicago: My experience is too recent to estimate the value as to hearing. In a period of one year I have done only sixteen operations of this kind, one of which I have converted into the radical. None of the others, so far as I know, have shown any necessity of being converted into the radical. So far as I know the patients are cured and the hearing up to date is conserved and very greatly improved. One man now prefers to use the telephone with

the ear on which operation was done. Some patients can hear whispers at ten to thirty feet. The hearing in all cases has been markedly improved over that before the operation. Whether it will continue is a question.

The meato-mastoid operation is different, as I understand, from Professor Jansen's operation. In the meato-mastoid operation he does not remove the outer wall of the attic.

PROF. A. JANSEN: In my modified operation I remove the lateral wall of the attic when necessary. When this is not necessary I conserve only the limbus. I take away the whole wall or leave the posterior part of the limbus, because when I do otherwise I consider it only a simple Schwartze operation.

DR. WILLIAM L. BALLENGER: As to the value of paying attention to the ethmoid and sphenoid, my experience does not coincide with that of our distinguished guest. I have found that it does make a difference to open the ethmoid and sphenoid cells, because they drain posteriorly over the mouth of the Eustachian tube and keep up swelling and inflammation of the tube and consequently perpetuate the discharge from the tube into the middle ear, and I have found that by cleaning out the ethmoid and sphenoid cells I have been able to stop the process without the mastoid operation. The same is true of adenoids.

The Thiersch grafting is not an essential part of the mastoid operation, I am positive, whether done primarily or two weeks afterward, or, as in my cases, four and six months, and in one case two years afterward. If you will follow the technic as I have attempted to describe it I believe you will not have to use Thiersch grafts and will be able with the skin flaps and the other technic to obviate the necessity for Thiersch grafts. It will be a rare case, indeed, in which they will have to be used. Of course, my cases are few as compared with Dr. Jansen's and I can not compare my experience with his, but in my limited experience I am convinced that the Thiersch grafts are very rarely required.

This is the third time I have read a paper on the meato-mastoid operation, and I have had a chance to observe the temper of the audience in listening to the subject. Each time the audience is tamer and tamer and entertains the thought with more and more tolerance. I predicted six months ago that every man in the audience I was addressing would do more than 50 per cent. of his operations along this line rather than by the radical method. I repeat the prediction here.

RESTORATION OF THE CONJUNCTIVAL CUL-DE-SAC FOR THE INSERTION OF AN ARTIFICIAL EYE.*

M. WIENER, M.D.
ST. LOUIS.

Wherever great difficulty is encountered in combating a certain disease or condition, we also find numerous methods for its relief. Thus when we have an orbital socket contracted by scars from burns or otherwise, we have the choice of many modes of procedure for restoring its depth so that it may retain a glass eye. Knapp[1] states that of the numerous attempts in the past twenty-five years which have been made to remedy this unfortunate condition he has not seen a single case either of his own or of others where there had been more than temporary improvement; this, too, including cases where the only object was to fit a stump for the prothesis of an artificial eye. Fuchs says cases of extensive symblepharon are incurable.

Czermak[2] says there are many devices for relief of symblepharon, but few are successful. Nine years ago May[3] reported the restoration of the conjunctival cul-de-sac by means of Thiersch's skin grafts, in which he used a porcelain shell covered with grafts from the arm or thigh, the shell being held in place by three stitches in the lid. Hotz[4] and Woodruf[5] have employed similar means, using a lead plate covered with skin grafts; while Wilder[6] found paraffin plates most advantageous in keeping the grafts immovable.

Leslie Paton[7] successfully relieved a case of symblepharon by sewing a piece of mucous membrane from the roof of a frog's mouth. Maxwell[8] uses skin flaps from the lid with good results, but there remains a scar on the cheek and some objectionable puckering. There have been methods similar to these devised by Pravosud, LaGrange,[9] Wicherkiewicz, Bruch, Gidney,[10] and others, but all along the same lines.

My method has its use where the socket, while shrunken, has still a small amount of conjunctiva left. An incision (A, B, C, Fig. 1) is made through the conjunctiva and a flap, including only the conjunctiva, is carefully dissected down to the lid margin (A C, Fig. 1). This dissection after being started with a knife can easily and quickly be finished with a small curved blunt scissors. The dissection is then continued with the scissors so as to loosen the skin below the lid margin (A C to B, Fig. 2), leaving a raw surface toward the bulbar side extended from B to B′ and A to C (Fig. 2), and on the palpebral side A B C (Fig. 2). Then sutures with a needle on either end are introduced at the points d, e, f (Fig. 1), and passing them through the bottom

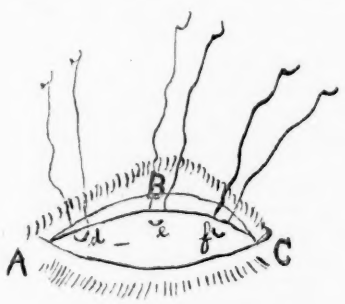

Figure 1.

of the newly made sulcus are brought through the skin at d′ e′ f′ (Fig. 2) and tied over a button. This gives a conjunctival covering for the lower lid and leaves the bulbar surface A B C B′ (Fig. 2) to be covered. This is done by covering a lead plate, previously shaped, with grafts from the thigh and placing carefully in position. A dressing is then applied and both eyes bandaged, the patient remaining undisturbed in bed for four days, when the outside dressings are replaced by clean ones without disturbing the plate. On about the eighth day the plate may be removed, cleaned and replaced. The glass eye can usually be worn by the tenth or fourteenth day. The stitches at d′ e′ f′ (Fig. 2) are not removed, but are tightened each day after the fourth day until they pull through. This is an additional help to holding the lower sulcus intact, as the internal scars resulting tend constantly to pull on the bottom of the sulcus and thus heighten the effect. It is important that these stitches should be allowed to pull through and not be removed before, for one is tempted to remove them after

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Norris and Oliver, System Diseases of Eye.
2. Augenärztlichen Operationen, 1893.
3. Arch. Ophth., 1899, 182.
4. Ann. Ophth., 1905.
5. Ann. Ophth., April, 1903.
6. THE JOURNAL A. M. A., 1906, xlvii.
7. Lancet, April 23, 1904.
8. Ophth. Rev., 1903.
9. Arch. d'Ophth., 1905.
10. Indian Med. Gaz., 1904.

a week when the lower sulcus may appear too deep. I have made this mistake, thinking I had secured a lower sulcus of exaggerated depth, when, on removing the stitches, it rose too high and became almost obliterated, so that the stitches had to be replaced. The following cases are of patients treated in the above manner:

CASE 1.—*Patient.*—Miss H. P., aged 28, of Helena, Mont.

History.—Lost left eye, when 8 years of age, following measles. Evisceration performed by a prominent ophthalmologist in Kansas City. She was able to wear an artificial eye for six years, when the socket became inflamed, contracted, and expelled the eye. Was treated until inflammation subsided, and then, being unable to wear a glass eye, was operated on three successive times by one ophthalmologist, and once by another, without success. Since then she had been told by

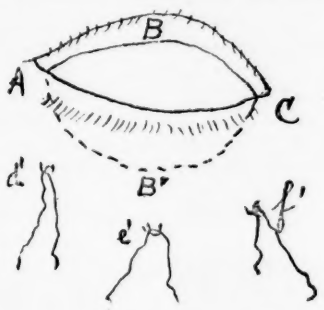


Figure 2.

several others that nothing could be done and that further operative procedure would be useless. She was compelled to wear dark glasses to hide the deformity, which was very embarrassing.

Examination.—Patient came to me for examination Oct. 8, 1904, and examination showed a much shrunken socket, traversed by scars, with no lower sulcus and a very shallow upper one.

Operation.—On Oct. 11, 1904, the above described operation was performed at Washington University Hospital under local anesthesia, skin for the grafts being taken from the arms. Both eyes were bandaged and not disturbed until the fourth day, when the outside dressing was removed, stitches tightened, and fresh dressing applied. October 24 the dressings were entirely removed, lead plate taken out, and a reform eye in-

Figure 3.

serted. This was worn continuously for three days, being taken out only to be cleaned; and on October 27 the eye was worn all day and taken out at night. Two of the stitches were pulled out on the eleventh day and the inner one pulled out on the fifteenth. The photograph (Fig. 3), shows the appearance of patient wearing a Snellen reform artificial eye three years after the operation. As will be seen, there is practically no sinking of the upper lid, while the eye has good movement.

CASE 2.—*Patient.*—Miss N. S., aged 17, Macedonia, Ill., came to Washington University Hospital Feb. 5, 1907.

History.—The patient had an atresic left eye due to a wound from a 22-caliber bullet, which had gone through the lower lid and lodged in the globe. There was a gap in the center of the lower lid margin and almost complete symblepharon of lower lid.

Operation.—The eye was enucleated the following day, at the same time the edges of the lower lid were approximated. On February 27 the above described operation was done and the patient treated in much the same manner as in Case 1. She is now able to wear a well-fitting artificial eye.

CASES 3 and 4.—Two other patients also were operated on at the Jewish Hospital, one on Nov. 26, 1907, and the other on Dec. 27, 1907. The immediate results in these cases have been good, but I have not thought it wise to report them in detail as they are of too recent date.

My reason for presenting this method is that my greatest difficulty heretofore, and also of my friends whom I have questioned, has been to establish a sufficiently deep lower sulcus. This operation has seemed to have overcome this difficulty.

DISCUSSION.

DR. F. C. TODD, Minneapolis: In attempting to restore a partial or complete obliteration of the cul-de-sac we must consider the fact that obliteration has occurred as a result of cicatricial contraction following erosion, trauma or burns (mechanical or chemical, as lime), and that after operation the same tendency exists, and is even aggravated by the trauma of the operation so that resulting failure occurs after ordinary implantation of grafts in the course of a few months. Were it not for the work of Drs. May, Hotz, Woodruff and Wilder, I should feel that success in severe cases at least could not be attained unless the skin-graft is anchored as in the Weeks operation, described at the Saratoga session, or by the method described by Dr. Wiener. You will remember that Dr. Weeks dissects clear to the periosteum and fastens the large skin graft to this periosteum, thereby effectually holding the skin in place and preventing later contraction. He also uses plates of dentists' modelling wax to hold the grafts during the healing process. The resulting cul-de-sac is very deep, which is no disadvantage, however, as an artificial eye can be made to order, if necessary, to fill the cavity and need not extend to the upper limits. Dr. Wiener emphasizes the importance of anchorage and recognizes this principle in an admirable manner, for the tissues, being cut through by the sutures during the healing process, make permanent ligatures, so to speak, of the resulting cicatricial bands which extend from the lining of the cul-de-sac to the skin surface of the cheek. His suggestion of the utilization of remaining conjunctiva, where it exists, as a lining for the lid, is good, for the normal position of the lid margin can thereby be better maintained than is the case when skin is used, and entropion or ectropion is less liable to result. These cases are rare and the experience of one operator is usually not great, though Dr. Weeks wrote me last fall that he had performed seventeen successful operations on ten patients (some requiring an operation for each lid), and in my limited experience since hearing his paper I have followed his method. At first I used the dentists' wax plates and later plates covered with paraffin after Dr. Wilder's plan, using aluminum instead of lead, however. It can be as readily moulded and secured of any dental supply house. I discarded paraffin, as it came off in a few days anyway, and I found that the aluminum could be made smooth by burnishing the edges after shaping the plate at the time of the operation. In the Weeks operation a large plate is necessary and I had difficulty in reinserting; therefore, I had some plates made. These are in two sections, and by loosening the thumb-screw will slide on one another (thus coming together into half the size), and then can be removed easily, and after reinserting closed, can be spread out and fastened by the thumb-screw. They are made of German silver, gold-plated, and are skeleton in form (they could be made solid, however), and adjustable to different sizes. The description and illustration of this plate will be published in the Ophthalmic Record.

DR. F. C. HOTZ, Chicago: In the attempt to enlarge or to restore the conjunctival sac for the insertion of an artificial eye, the main object must be to restore the lining of the inside of the lower lid, because if we have a well-marked lower lid the lower edge of the artificial eye can rest securely in a cul-de-sac, and that is the main thing. When there is conjunctiva

left, the plan that was followed here is certainly very good, to utilize the remaining conjunctiva as a lining for the lower lid. We do not need much of the recess in the upper lid to hold the artificial eye, but the lower lid must afford a deep recess for the artificial eye or it is apt to slide out. In fixing this lower lid conjunctival flap I have been using a plate on the lid to keep the flaps smooth. To fix the plate I put the sutures through its lower edge to fasten it with the skin. That absolutely insures smoothness. I leave it in until the stitches cut through. If necessary, the wound of the socket can be filled in with a Thiersch graft, fastened down by sutures, a plug of white wax moulded to the form and the depth of the sac is put in, the lids closed over it, and a pressure bandage applied to hold it firm.

We hear much about shrinkage of the flaps. They of course shrink according to the lessened resistance of the surrounding parts. If it is fixed, in ectropium of the upper lid, for instance, to the free lid border and the upper border of the cartilage, you will be surprised how little shrinkage takes place, for here the graft is attached to parts which can not be moved, and therefore successfully prevent the shrinkage of the flap. Where there are movable borders, however, the shrinkage will take place, and it may be necessary to repeat some grafting. The first case I operated on, simply to enlarge the socket, I took out the scar tissue, put in a pretty large flap. It shrank, of course, within the first three months, but I saw the patient several times in after years, and to my satisfaction saw that the flap had not shrunk visibly any more than the first three months.

MR. E. TREACHER COLLINS, London, Eng.: I have had some very satisfactory results in these cases of contracted socket from the employment of an operation devised by Dr. Maxwell of Dublin. As the first step, make an incision through the conjunctiva at the bottom of the cul-de-sac, then one through the skin of the lower lid of about the same length as the other. Mark out on the eyelid a flap of skin; you dissect up that flap but leave it attached at the center. Now make a tunnel between the two incisions—under the lid. Then pass a suture through the angle of the flap and carry it up under this bridge of tissue and insert it at this point. You then have a flap the center of which is held down. You afterward stitch up the gap in the lower lid. At the conclusion you put in a glass shell, like a glass eye with the cornea taken out, to allow drainage. I used to try to get rid of these cases, but since the adoption of this operation I am rather pleased when they come along, for I have had some very satisfactory results.

DR. W. H. WILDER, Chicago: If the plate is covered with some material such as paraffin, it is possible, even after it is in place, inasmuch as the graft then lines the pocket, to insert stitches that will anchor it in position. This, in simple cases, is not necessary. One advantage of having a plate covered with some material like paraffin, is the case in handling the thin graft which has such a tendency to roll up, but which adheres so evenly and smoothly to the paraffin surface. Furthermore, with such a covering of the plate as paraffin, one can feel sure that the cornea will not suffer injury.

DR. M. WIENER, St. Louis: We all know that in taking the flaps *in toto* there is contraction, but there is very little contraction with the Thiersch grafts. Dr. Todd objected to inserting the lead plate because it is rough. He uses aluminum. I have used a lead plate dipped in paraffin, which makes it smooth. The Maxwell operation is mentioned in my paper, but not described. The objection I stated to this operation was that there was a good deal of puckering in the lower lid. As I have said, my reason for presenting this method is that my greatest difficulty heretofore, and also of my friends whom I have questioned, has been to establish a sufficiently deep lower sulcus. This operation has seemed to overcome this difficulty.

Treatment of Circulatory Disorders.—Paul Franz, of Bad Nauheim, states in the *Dietetic and Hygienic Gazette*, July, 1908, that the one great and fundamental factor in circulatory disorders of all kinds is to restore normal metabolism by means of physical treatment and diet.

Clinical Notes

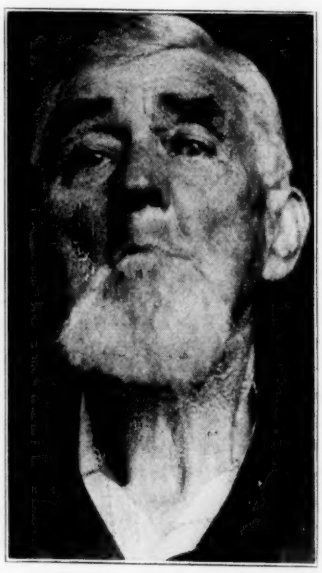
LARYNGECTOMY FOR CARCINOMA OF THE LARYNX.

REPORT OF TWO CASES, SPECIMENS EXHIBITED.*

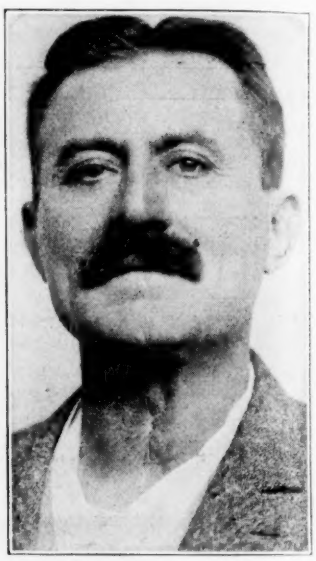
LA FAYETTE PAGE, A.M., M.D.
Clinical Professor of Diseases of Nose, Throat and Ear, Indiana University School of Medicine.
INDIANAPOLIS.

CASE 1.—*Patient.*—E. L. L., age 72, a mechanic, was first examined by me Sept. 5, 1903. He had always had excellent health until he lost his voice from a cold during the previous spring. He had used tobacco constantly and alcohol occasionally. Nothing in the man's appearance indicated dissipation. The hoarseness had been persistent and occasionally a little blood came from his throat. There had been more or less constant pain in the left ear radiating from the throat.

Examination.—A laryngoscopic examination showed a growth rather larger than a bean, in the anterior commissure of the vocal cords, apparently springing from the under surface of the left cord. There was considerable infiltration about the left cord. The surface of the tumor was irregular and nodular, very hard and light in color, and the left cord perfectly immobile. A saturated solution of iodid of potassium was prescribed and the patient was kept on large doses until it was found that the drug did not retard the growth of the tumor in the least. Sections were removed and submitted to two pathologists. Both reported that the growth was a carcinoma. By the first of the following February—five months—the growth had increased to such an extent and breathing was so labored that death from suffocation was evidently near at hand. The case afforded almost every clinical evidence of cancer.



Case 1.



Case 2.

Case 1.—Mr. E. L. Long. Left half of larynx removed for carcinoma, Feb. 5, 1904, age 72. Now has fair voice and good health at 76.

Case 2.—Mr. J. S. Farrell. Left half of larynx removed for carcinoma, Dec. 26, 1904, age 52. At present in fair voice and good health.

Operation.—A radical operation was performed Feb. 5, 1904, in which the left half of the larynx was removed entire. The patient was placed in the Trendelenburg-Rose position and chloroform administered. The first incision extended from the hyoid bone to the sternum and the tissues were dissected and pushed aside, exposing the laryngeal and tracheal cartilages.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

A low tracheotomy was done and an ordinary large canula was introduced and secured with tape. The chloroform was then administered through a rubber tube connected with chloroform apparatus and the canula. The thyroid cartilage was then split (with difficulty owing to calcification) in the median line with bone forceps and the larynx laid wide open and examined with a strong head light. The interior of the larynx was then painted with cocain and adrenalin. The disease was found to be confined to the left half. The left half of the thyroid and cricoid cartilages were then removed by freeing the surrounding tissues and pushing aside the perichondrium. Great care was necessary in separating the laryngeal tissues from the esophagus. Several strips of iodoform gauze were placed in the laryngeal cavity and brought out through the lower part of the wound and secured. The upper part of the larynx was closed with sutures and the dressings placed.

Later History—The subsequent treatment required close and careful attention. The tracheal tube was kept in two days. It was several days before fluids or solids could be swallowed without passing out the wound, so he was nourished through a tube. He made a good recovery, and now, at the end of four years, is 76 years old, in good health and able to earn his living (Fig. 1).

CASE 2.—*Patient.*—J. S. F., age 52, contractor, had an excellent tenor voice and often sang in choirs. He used tobacco excessively and at one period of his life used alcohol. His father, a soldier, died of dysentery during the war, at the age of 40; his mother died at 65 from an accidental fall. His six brothers and sisters were all living and healthy. There was no history of malignant disease or syphilis. The patient was an excellent specimen of manhood and had always enjoyed good health with the exception of chronic bronchitis.

Course of Disease.—A persistent hoarseness set in during the spring of 1904, following an acute laryngitis. During this attack a small papillomatous-looking growth appeared growing from below the cords in the anterior commissure. During the months of May and June applications of argyrol were made to the larynx with other local treatment and a saturated solution of the iodids administered internally. The progress of the growth was daily watched until about the first of July when sections were removed and microscopically examined. Each specimen was reported to be unmistakably a flat-celled carcinoma. After these examinations the patient took several weeks rest in the woods of Wisconsin. When he returned I advised an immediate and radical operation, and at that time a thyrotomy would have been, in my opinion, sufficient. After this advice (September 1) the patient was not seen again until December 20, when he called at my office and said that he was ready to have the radical operation performed, if I thought best. In the meantime, he said, he had consulted Dr. E. Fletcher Ingals of Chicago, who said that the growth was suspicious but that he hoped it was only a large papilloma. He removed the tumor intralaryngeally, and sent the specimen to Professor Hektoen for examination. His report was: "The specimen which you sent me is a flat-celled carcinoma." This was followed by local treatment for a few days and then the patient was permitted to return home. He again visited Dr. Ingals two months later, who found that the growth had returned. The patient was then advised to undergo a radical operation. After he had given me this history, an examination of the larynx was made and it was found that the disease had made rapid progress, but was as yet apparently confined to the left half of the larynx.

Operation.—After explaining to the patient his chances for recovery, and that a complete laryngectomy would probably be necessary, it was decided to have the operation performed at once, Dec. 26, 1905, at the Deaconess Hospital. The teeth and upper respiratory tract were rendered as nearly aseptic as possible. The trachea was prepared by frequent injections of antiseptic oils and sprays. The patient was placed on the table in the Trendelenburg-Rose position and the chloroform was administered first by mouth and then by tube and canula. The different steps of the operation were about the same as detailed in Case 1. Extensive removal, including a part of the right thyroid cartilage and vocal cord, in addition to the entire left half of the larynx and the adjacent lymphatic glands, was found necessary. In separating the cartilages from the esophagus, the esophageal tube was introduced and found to be of decided help.

Later History.—In the after-treatment of this case there were a number of complications. The old bronchitis was troublesome and at one time pneumonia was threatened. A very rapid pulse and irregular and disturbed respiration, due probably to interference of functions of the pneumogastric, were finally corrected with digitalis and strychnia. After the wound healed the *x*-ray was used with apparent good effect in preventing a return. Three and one-half years have elapsed, the allotted time, the laryngeal cavity looks exceedingly healthy, and the patient has been perfectly well since. (Fig. 2).

The Hahn canula was not found necessary in either of these cases.

30 Willoughby Building.

DOUBLE-HEADED MONSTROSITY.

GEORGE E. OREBAUGH, M.D.
HIGHLAND, OHIO.

Parents.—Mrs. C. L. M., aged 25, weight 108 pounds; had been in good health for several years, except for a leucorrheal discharge. She is perfectly developed. Her husband has no bad habits and no deformities. The family history on both sides is good, there being no abnormal births or twins in either family.

History.—I was called to see the woman during the latter months of pregnancy and found her suffering from persistent vomiting and from intense pain in the right side. On March 6, 1900, I was again called to see her. After protracted labor she gave birth to a female child which died in a few minutes. The breech presented, making the delivery difficult, and in addition the placenta was adherent. The mother is now in good health and has since given birth to a normal child.

Description of Child.—The child had one body, perfect in form from shoulders to feet. There were two legs and two arms, three spinal columns and two perfectly formed heads and necks, each separate and distinct. Each head measured fourteen inches in circumference. Other measurements were as follows: Across the shoulders, 8 inches; around thorax, 15½ inches; length of arm, 8½ inches; length of legs, 11 inches; length of body, 20 inches; weight, 14 pounds.

A CASE OF SUPPURATIVE PYELONEPHRITIS, WITH SPECIMEN.

G. SHEARMAN PETERKIN, M.D.
SEATTLE, WASH.

This case and specimen is presented as graphically illustrating possible sequelæ of gonorrhea and teaching (1) the necessity of care in pronouncing gonorrhea cured, i. e., that there will be no sequelæ; (2) the necessity of gentleness in genitourinary surgery; (3) the rapidity with which infection in the genitourinary tract may prove fatal.

The specimen was obtained in the following case:

History.—M., male, aged 36, occupation, logger; had gonorrhea in 1895. During the last two years he had had some trouble in voiding urine, but only when drinking heavily. At this time he had also a slight urethral discharge; otherwise, no symptoms. He was never incapacitated from work. On June 6, 1907, he had been drinking heavily, but had attended to his duties. On this date he had acute retention and the sound was used to relieve same. Twenty-four hours later, June 7, he came to Seattle and presented himself for treatment at the local hospital. His condition was referred to the visiting physician as that of a case of gonorrhea, with retention, complicated by orchitis because of the swollen scrotum. He was catheterized with difficulty and two or three ounces of bloody urine obtained; catheterization was repeated after four hours. Twenty-four hours later the case was referred to me.

Examination.—There was evidence of commencing uremic coma; extravasation of urine, extending over the perineum, scrotum and half way up to umbilicus.

Operation.—A suprapubic cystotomy was done to relieve the retention. No attempt was made toward diagnosis. One quart of reddish-black, grumous, ammoniacal urine was evacuated and the bladder mucous membrane came away in large shreds. The patient died in eight hours without recovering consciousness.

Autopsy.—Postmortem findings were as follows: At the bulbous portion of urethra, was a stricture (Fig. 1, A). Along side of this, but slightly posterior, was found a urethral calculus (Fig. 1, B); size, ⅝ by 5/16 inches, or 1.5 by 8.5 cm.; weight, 8.5 gms., or a little over 2 drams; composition, phosphatic calcium magnesium. A cavity was plainly visible where the stone in the urethra lodged (Fig. 1, C), and a piece of catheter has been passed through the opening caused by the stone (Fig. 1, D). The prostate was found to be the seat of

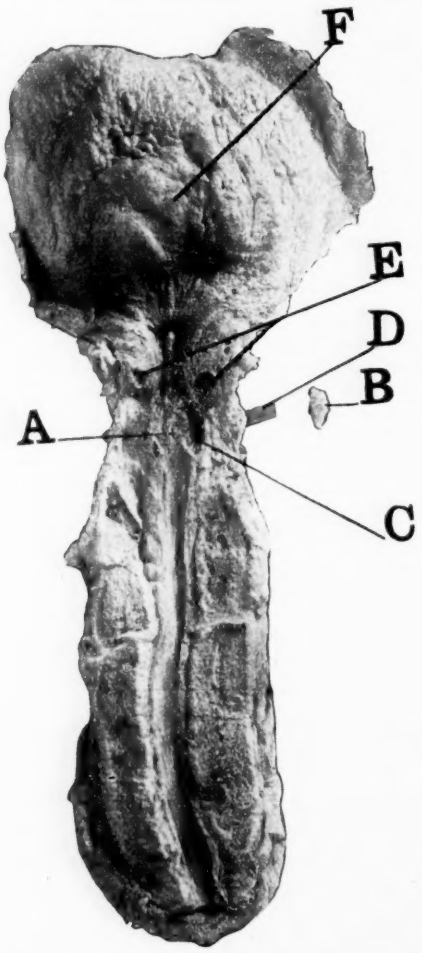

Fig. 1.—The urethra laid open; A, point of stricture; B, urethral calculus; C, cavity in which calculus lodged; D, piece of catheter passed through opening caused by stone; E, seat of abscess in prostate; F, bladder denuded of mucous membrane.

an abscess (Fig. 1, E) and the bladder was absolutely denuded of all mucous membrane (Fig. 1, F).

Left Kidney.—Macroscopic Findings: Size, 6 by 10 cm. (2¼ by 4 in.); weight, 139.3 gms. (4½ oz.); surface irregular, lobulated and knotty; capsule, thin and tight; strips with ease; in cortex, near surface, abscess (Fig. 2A), 1 by 1.5 cm. (⅜ by ⅝ in.) in size, filled with thick cheesy pus. Pelvis and calices enlarged; membrane, thick and rough; ureter, distended and thickened, coated with flakes of fibrin.

Microscopic Findings: Micro-organisms *Bacillus coli communis, Staphylococcus pyogenes albus.* Cortex, glomeruli congested, showing marked diapedesis of the red blood cells, a thinning distention and rupture of the capsular epithelium and membrane; in other places, the epithelial cells are lifted and separated from the basement membrane. The appearance of the tufts is irregular, having lost their definition and convoluted arrangement. In the areas of interstitial degeneration, the tufts are either partially or totally destroyed. The convoluted and straight tubules show a mild degree of swelling, with a paling and disappearing of the nuclei; they give the appearance of moderate amyloid degeneration. The lumens of the tubules are not distended, but flat and normal in appearance; they contain no casts or moulds. The interstitial tissue, shows perhaps, the greatest change of all. There is present a

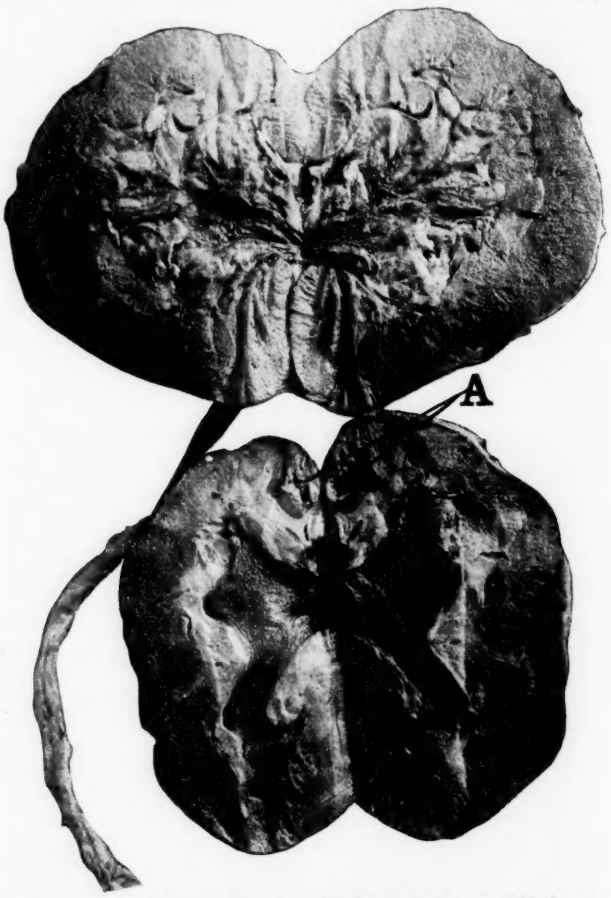

Fig. 2.—Left kidney split open showing an abscess (A) in cortex.

Fig. 3.—Left kidney showing abscesses A, B, C, D, seen only from the external surface.

marked active congestion, leucocytes often predominating the field. In other places, there is a wide and free dissection of the interstitial tissue, with rupture of glomeruli and tubules; many of these are communication cyst cavities. Between the tubules are small collections of pus. The dissection has separated the straight tubules and extends clear to the renal capsule —in many places resembling the appearance of emphysematous lung tissue, being a fine, irregular network of stroma tissue, creating spaces unlined with epithelium or cells. In Figure 3 —left kidney—the white pieces of paper show other abscesses seen only from external surface.

Right Kidney.—Macroscopic Findings: Size, 8 by 11 cm. (3 by 4½ in.); weight, 217.70 gm. (7 ounces); heart-shaped; surface, slightly lobulated, smooth, capsule, adherent; cortex, 1.5 to 2.5 cm. (½ to 1 in.) thick, firm, no abscesses; pelvis large, irregular; ureter, large thickened walls; pelvis dilated, mucous membrane thickened, congested, and coated with patches of fibrin.

Microscopic Findings.—These show a similar picture to that of the left kidney, with the active congestion well marked and hemorrhagic infiltration of the tufts. The blood vessels show no characteristic changes, except the venous system, which is slightly dilated, with distortion of the capillaries.

TWO ADENOMATA OF THE ISLANDS OF LANGERHANS.

MARY ELIZABETH MORSE, M.D.

Pathologist to the New England Hospital for Women and Children.

BOSTON.

Adenomata of the islands of Langerhans have seldom been described in the literature, probably because they are accidental findings in the routine examination of autopsy material rather than because they are actually very rare. Nichols,[1] in 1902, reported one which he believed was the first of the kind on record, and Helmholtz,[2] in 1907, added a second case. The reader is referred to their articles for a discussion of several other tumors described as arising from the islands of Langerhans, but apparently of doubtful origin. A search through the literature reveals no additional cases. Recently, however, two tumors of this kind have come under my observation. The first was found at the New England Hospital in the service of Dr. Clara J. Alexander; the second at the Boston City Hospital by Dr. O. R. Mabee, through whose courtesy I am enabled to report it. Both were discovered at autopsy, and have no bearing on the clinical histories or the other anatomic changes.

The first growth was from the pancreas of a woman, aged 44, dying of peritonitis. The gland appeared normal macroscopically, and the tumor was found in the specimen from the splenic end saved for microscopic examination.

Examination of First Tumor.—It forms a sharply defined encapsulated nodule, 5 mm. (¼ in.) in diameter, situated in the midst of the pancreatic tissue. It is composed of interlacing strands of cells supported by a connective tissue framework carrying blood vessels. The columns are in general two or three cells broad, but they often spread out into irregular masses. The cells are uniform in appearance throughout the tumor. They are indistinct in outline, polyhedral or cuboid in form, with a large vesicular nucleus and a moderate amount of finely granular cytoplasm, which stains faintly with eosin. The nucleus is usually centrally situated, and contains one or more prominent chromatin masses. In short, the cells correspond in appearance and arrangement to those of the islands of Langerhans. No mitotic figures are found. The connective tissue framework is rather heavy. The blood vessels are dilated, frequently forming large spaces. They are intimately related to the cell columns, the latter resting directly on the capillary walls. The capsule is composed of coarse fibrillated connective tissue. Groups of tumor cells are included in it at several points, but do not penetrate it.

Islands of Langerhans are abundant in the pancreatic tissue surrounding the tumor. Some of them are unusually large, but otherwise they show nothing noteworthy. The pancreas contains a slight excess of connective tissue. The acini are small, the gland cells are shrunken, stain deeply and show no signs of secretion. The entire pancreas was cut in cross section at intervals of about 5 mm. (¼ in.), but no other tumor nodules were seen. Sections from various parts of the gland show numerous enlarged islands, some three or four times the usual size.

The second adenoma, which was found in the pancreas of a man, aged 46, dying of cerebral hemorrhage, arteriosclerosis and chronic nephritis, closely resembled the first.

Examination of Second Tumor.—It forms an encapsulated nodule 3 mm. (⅛ in.) in diameter. It is, however, more cellular than the first tumor, and the cells show greater variation in size and appearance. Some are three or four times as large as others; still others have a coarsely reticulated cytoplasm which scarcely stains.

The relation of adenomata of the islands of Langerhans to malignant tumors of the pancreas is unknown; but it seems doubtful whether they have any importance

Adenoma of the islands of Langerhans. The tumor here shown is 3 mm. (about ¼ inch) in diameter and situated in the midst of pancreatic tissue. The tumor cells are indistinct in outline, poly hedral or cuboid in form and each contains a large vesicular nucleus and finely granular cytoplasm. The capsule is composed of coarse fibrillated connective tissue.

1. Jour. Med. Research, May, 1902, iii, 385.
2. Johns Hopkins Hosp. Bull., 1907, xviii

in this direction. Fabozzi[3] has reported five cases of carcinoma, however, which he considered arose from the islands of Langerhans. His work has not been confirmed, and indeed others (Reitmann,[4] Sauerbeck[5] and Grimani[6]) dissent strongly from his views. Speaking against this theory is the fact that, in carcinoma of the pancreas the islands, if not entirely destroyed, have in most of the cases reported shown no essential change. They seem to be more resistant to the invasion of the tumor than are the pancreatic acini, and may persist as isolated structures in the new growth after the glandular tissue has vanished. Sauerbeck describes carcinomatous masses inside the islands in one case, metastases from a cancer of the breast. This, he thinks, is the first report of the involvement of the islands in a carcinomatous process, either primary or secondary.

For permission to use the photomicrograph of the second tumor I am indebted to Dr. F. B. Mallory.

PELLAGRA.

REPORT OF CASE, WITH REMARKS ON ETIOLOGY.

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Pellagra was first described by Gasper Casal in 1750, under the name of *"mal de la rosa,"* and since then has been found to be prevalent in many countries. It is said that there were fully 100,000 cases in Italy in 1905, and at least 3,000 of these were in the lunatic asylums.

Fig. 1.—Hand of pellagrous patient from photograph taken after decided improvement had occurred in skin lesions.

Many cases have been reported from the various tropical and subtropical countries, but none from the United States until 1907; although in 1902, Dr. H. F. Harris reported to the Georgia Medical Association a case of ankylostomiasis with pellagrous symptoms and called attention to the possibility of this disease being present in Georgia.

In July, 1907, Dr. George H. Searcy[1] reported an epidemic of acute pellagra at the Mount Vernon Hospital for the (colored) Insane in Alabama. Dr. J. W. Babcock[2] of the State Hospital for the Insane at Columbia, S. C., made in December, 1907, a written report to the board of trustees of that hospital, calling attention to the presence of pellagra in South Carolina, and urging further investigations. Since Dr. Searcy's article, a case has been reported by Dr. T. C. Merrill,[3] from Texas.

3. Beitr. z. Path. Anat. u. allg. Path., 1903, xxxiv.
4. Ztschr. f. Heilk., 1905, xxvi (vi, new series), 1.
5. Virchows Arch. f. path. Anat., September, 1904, supplement, clxxvii.
6. Policlinico, Rome, 1906, xiii, 460.
1. An Epidemic of Acute Pellagra, THE JOURNAL A. M. A., July 6, 1907, xlix, 37.
2. What are Pellagra and Pellagrous Insanity? Does Such a Disease Exist in South Carolina, and What are Its Causes? Preliminary Report from S. C. State Hospital for the Insane.

REPORT OF CASE.

Patient.—A woman, aged 37, born in Columbia County, Ga., was admitted May 19, 1908, to the Lamar Hospital for Negroes, at Augusta, Ga. It was impossible to get any history further than that the patient had worked on a farm, and moved into the city about March 1. No peculiarities were noted by her acquaintances at that time in regard to her mental condition, but the skin lesions were then present, and she said that they began to appear during February. Previous to their appearance, she complained of weakness and pain, especially in her hands and feet. About two weeks before she entered the hospital, it was noticed that she would act peculiarly at times, often having fainting spells and falling to the floor. May 19, she started to walk to the hospital, but fell on the street, and was brought in an ambulance. When seen by me the next day, she was in a semistupor, and would not answer questions. The buccal cavity was filled with foul-smelling fluid, which she made no effort to expectorate.

Fig. 2.—Legs and feet of pellagrous patient, from photograph taken after decided improvement had occurred in skin lesions.

May 23: She was delirious, screaming loudly and talking religion. At times, since then, her mind seemed clearer, and she would answer questions; but most of the time she took

3. A Sporadic Case Diagnosed as Pellagra, THE JOURNAL A. M. A., Sept. 14, 1907, xlix, 940.

no interest in her surroundings. Marked salivation, noted when she first entered hospital, gradually subsided.

Physical Examination.—The pupils were normal. There were no ulcers in the mouth at time of admittance, but a small superficial ulcer of tongue was noted at one time during her stay in the hospital. A narrow pigmented line was noted on each side of the tongue near the margin and extending toward the tip. Similar pigmented areas were noted on the inner sides of cheeks. There were five badly decayed teeth. Lymphatic glands were generally palpable. Small, brown, pigmented spots were seen on various parts of the body and on the soles of the feet, probably luetic in origin. Examination of lungs, heart, and abdominal organs was negative. Nothing abnormal was noted on either arm, but on each elbow the epidermis was dry and darkly pigmented. Beginning at the middle third of each forearm, the skin was dry, very much thickened, especially over the hands, and black, looking very much as if the hands had been dipped into soot. The diseased skin was wrinkled and fissured in various places over the hands. The palms and fingers were involved as well as the backs of the hands. The nails were not involved. The thighs were normal in appearance, but the epidermis was somewhat thickened, wrinkled, and decidedly discolored over each patella, and the inner side of each knee. Extending from the lower third of the leg over the dorsum of each foot, and over the toes, the skin looked mummified—was black, scaly, dry, hard, and very much thickened. The skin was cracked in various places, and over the middle toe of the left foot had sloughed, leaving granulating tissue exposed. The toe-nails were normal. There were small, brown, pigmented spots on the soles of the feet; otherwise the skin was normal. The external genitals showed no ulcerations. The patient gave no evidence of pain when stuck with a pin over the affected areas of skin and over parts of the arm, but flinched when the body was touched. Knee-jerks were absent. The bowels were very constipated. The stools were neutral in reaction, and contained no eggs.

Urine: The patient passed urine in bed, unless vessel was given her at regular intervals. Examination of catheter specimen, May 23, showed: Reaction, acid; sp. gr., 1012; no albumin; no sugar; no cellular elements. Examination of 24-hour specimen of urine, June 16, showed: Amount, 1450 c.c.; reaction, acid; albumin, none; sugar, none; indoxyl, slightly increased; no casts; no blood.

Blood: Four blood examinations made by Dr. M. S. Levy, at different times during the patient's stay in the hospital, showed hemoglobin varying from 80 per cent. to 86 per cent.; leucocytes from 9,400 to 10,600; red cells from 4,500,000 to 4,610,000. The differential counts showed a variation in the small lymphocytes from 20.5 per cent. to 24 per cent.; large lymphocytes from 4 per cent. to 5 per cent.; polynuclears from 65.5 per cent. to 68 per cent.; eosinophiles from 4 per cent. to 5.5 per cent.; transitionals from 1 per cent. to 2.5 per cent. No plasmodia or other abnormalities were noted. Examination of smears and cultures from cerebrospinal fluid gave negative results.

Course of Disease.—The patient began to show signs of improvement soon after her admittance to the hospital, and by June 16, her mental condition was much better, although still sluggish. She was then able to be up, but would occasionally fall on attempting to walk across the ward; the diseased skin of the arms and hands had peeled (Fig. 1), leaving fairly normal tissue beneath, and the skin lesions on her legs and feet (Fig. 2) showed signs of improvement.

This case is of interest, because of the very marked presence of the three cardinal symptoms of the disease, salivation, mental disturbance, and peculiar skin lesions. The fact that the skin lesions did not appear on the face, but on the knees, is of interest in showing that exposure of the part to the sun does not always determine the location of the lesion.

PREVALENCE OF THIS DISEASE IN SOUTHERN STATES.

From correspondence with physicians in charge of different insane asylums in the south, I believe that pellagra is much more prevalent in this section of the country, especially among the negroes, than we have any idea of at the present time.

Louis W. Sambon,[4] in 1905, called attention to the peculiar fact that no cases had been reported from the United States, but said: "I believe it is far more common in tropical and subtropical regions than we are aware of at present."

ETIOLOGY.

It is by no means proved that damaged maize alone is capable of producing this disease, although this is the theory held by many authorities, especially the Italian investigators. So good an authority on tropical medicine as Sambon, and many of the Spanish investigators oppose this view, and give much evidence against it. Sambon says:

> If I were to suggest a new theory of pellagra, merely as a working hypothesis, I should feel inclined to draw attention to the many analogies between pellagra and some of the protozoal diseases which have been recently worked out.

So far, only a few complete reports have been made of examinations of the blood and cerebro-spinal fluid, and as yet, no light has been thrown on the subject by work along this line. However, Sambon's suggestion offers a most inviting field for further investigations.[5]

NASAL MENSTRUATION.

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Patient.—Mrs. H., aged 55, German.

History.—She has always been well and has borne five children. Menstruation commenced at age of 13, and has always been regular, though with some pelvic pain and distress two or three days prior to flow. She entered the climacteric at age of 49. There were no unusual pelvic symptoms. However, as the regular monthly uterine menstruation diminished there was "nasal menstruation," lasting from two to four days, preceded by more or less severe headache. This condition lasted about two years when normal menstruation ceased and "nasal menstruation" became permanently established.

Examination.—I first saw the patient in December, 1907, almost two years after the last normal menstrual epoch. She consulted me on account of an enlargement in the angle of the right jaw in the region of the parotid gland. She stated that on the cessation of the menses the gland would become painful, and enlarged each month, while at the same time she experienced more or less headache. All these symptoms disappeared as soon as the nose bleed commenced. After a few months she noticed that the gland remained enlarged: it had gradually increased in size so that at this date it was as large as an apple. During the period of nasal hemorrhage the gland would "swell up" and after the flow disappeared would "go down."

Operation.—April 14. The entire gland was removed and the patient rapidly convalesced. On the third day following the operation the nose bled more or less freely though not exceeding 64 gms. *in toto*. The symptoms were identical with those of menstruation following oöphorectomy.

Subsequent History.—The patient has had no more headache and no nasal hemorrhage and is in the best possible condition.

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4. Remarks on the Geographical Distribution and Etiology of Pellagra. Brit. Med. Jour., 1905, ii, 1272-1275.

5. In addition to references already given the following may be consulted:

Pellagra Occurring in England, Practitioner, London, 1906, lxxvi, 679-685.

Examen du sang et du liquide céphalo-rachidien dans la pellagre, Compt. rend. Soc. de biol., Paris, 1907, lxiii, 218.

Le traitement de la pellagre par l'atoxyl, Bull. Acad. de Méd., Paris, 1907, lviii, 139-142.

New and Nonofficial Remedies

THE MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

ADOPTION OF REVISED RULES GOVERNING NEW AND NONOFFICIAL REMEDIES.

A meeting of the Council on Pharmacy and Chemistry of the American Medical Association was held at the Association building, Chicago, July 17 and 18, 1908. The following members were present:

J. A. Capps, A.M., M.D., Assistant Professor of Medicine, Rush Medical College, University of Chicago.

David L. Edsall, A.B., M.D., Professor of Therapeutics and Pharmacology, Department of Medicine, University of Pennsylvania, Philadelphia.

Otto Folin, S.B., Ph.D., Professor of Biologic Chemistry, Harvard Medical School, Boston.

C. S. N. Hallberg, Ph.G., M.D., Professor of Pharmacy, University of Illinois School of Pharmacy, Chicago.

R. A. Hatcher, Ph.G., M.D., Professor of Pharmacology, Cornell University Medical College, New York City.

Reid Hunt, M.D., Chief of the Division of Pharmacology, U. S. Public Health and Marine-Hospital Service, Washington, D. C.

L. F. Kebler, M.D., M.S., Ph.C., Chief of the Drug Laboratory, Department of Agriculture, Washington, D. C.

J. H. Long, M.S., Sc.D., Professor of Chemistry, Northwestern University Medical School, Chicago.

F. G. Novy, M.D., Sc.D., Professor of Bacteriology, University of Michigan, Ann Arbor.

W. A. Puckner, Ph.G., Secretary of the Council and Chief of the Chemical Laboratory of the American Medical Association, Chicago.

G. H. Simmons, M.D., LL.D., Chairman of the Council and Editor of THE JOURNAL of the American Medical Association, Chicago.

Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica, Medical Department, Western Reserve University, Cleveland, O.

Julius Stieglitz, Ph.D., Professor of Chemistry, University of Chicago.

M. I. Wilbert, Ph.M., Apothecary, German Hospital, Philadelphia.

As its chief business the Council discussed the revision of the rules and the rearrangement of the matter contained in "New and Nonofficial Remedies." It was decided that the book "New and Nonofficial Remedies" shall contain descriptions of the proprietary articles accepted by the Council and of such simple non-proprietary and unofficial substances as are of sufficient importance. It was decided that proprietary mixtures shall not be included in the main body of the book unless they show some originality and present a marked advance over similar products, but when these conform to the rules they shall be included in the form of an appendix to the book. Articles which are official in the United States Pharmacopeia or in the National Formulary, and non-proprietary mixtures of official articles, are not eligible for inclusion in the book.

The rules were modified in minor particulars, the following modifications being of first importance:

Rule 5 was so amended as to require that the actual identity of the manufacturer of a product be furnished.

The Council voted to interpret Rule 8 so that after Jan. 1, 1909, pharmaceutical preparations and mixtures will be admitted only under a pharmaceutical title which shall indicate the most potent ingredients. Arbitrary coined names will not be recognized for pharmaceutical mixtures.

It was decided that no pharmaceutical mixture shall be accepted whose name indicates its therapeutic action or is suggestive of the names of diseases or pathologic conditions in which it is to be used. After Jan. 1, 1909, this rule is to be extended to simple articles.

The Council voted to condense Rules 9 and 10 to become Rule 9.

A rule—Rule 10—was adopted under which recognition will be refused to articles which, because of their unscientific composition, are useless or inimical to the best interests of the public or of the medical profession.

The rules as modified are as follows:

OFFICIAL RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

INTRODUCTION.

The following rules have been adopted by the Council with the object of protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary medicinal articles. Those physicians who wish to profit by this protection can do so by confining themselves in their prescribing to the articles which are contained in the current issue of the United States Pharmacopeia ("U. S. P."), of the National Formulary ("N. F.") or of "New and Nonofficial Remedies" ("N. N. R.").

The "N. N. R." contains a description of such proprietary articles as have not been found to conflict with the rules of the Council; and, of such simple non-proprietary and unofficial substances as seem of sufficient importance.

Proprietary pharmaceutical mixtures should comply with the rules and will be investigated by the Council. The Council, however, endorses the principle that prescriptions should be written on the basis of the therapeutic effects of the individual ingredients. For this reason, it does not include mixtures in this book unless they present some real advantage. If, however, the physician wishes to prescribe ready-made proprietary mixtures, he will find in the appendix, listed under the name of the manufacturer, those proprietary mixtures which on examination have not been found to conflict with the rules.

Non-proprietary mixtures share the status of the substances from which they are prepared, and therefore are not contained in the book.

RULES GOVERNING THE ADMISSION OF PROPRIETARY ARTICLES TO THE BOOK "N. N. R."

(The term "proprietary article" in this place shall mean any chemical, drug or similar preparation used in the treatment of disease, if such article is protected against free competition, as to name, product, composition or process of manufacture; by secrecy, patent, copyright, or in any other manner.)

Rule 1 (Ingredients).—No article shall be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, and the identity of any preservatives, must be furnished.

Rule 2 (Identity).—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

Rule 3 (Direct Advertising).—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, advertised for uses other than on the human body, or to non-medicinal food preparations, except when advertised in an objectionable manner.

Rule 4 (Indirect Advertising).—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is said to be indicated. The

therapeutic indications, properties and doses may be stated. (This rule does not apply to circulars, etc., when distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

Rule 5 (Fraudulent Claims as to Origin).—No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to source, raw material from which made, or method of collection or preparation. The identity of the actual manufacturer of the article must be furnished.

Rule 6 (Fraudulent Claims as to Therapeutic Value).—No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value.

Rule 7 (Poisonous Substances).—The principal label on an article containing "poisonous" or "potent" substances must state plainly the amount of each of such ingredients in a given quantity of the product.

Rule 8 (Objectionable Names).—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, unsatisfactory or objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

[a. The Council has voted so to apply this rule that after Jan. 1, 1909, pharmaceutical preparations and mixtures will be admitted to the "N. N. R." or appendix only under pharmaceutical title which shall indicate the most potent ingredients. Arbitrary coined names will not be recognized for pharmaceutical preparations or mixtures, but they may be admitted for new chemicals or active principles.

b. The Council has voted that no pharmaceutical mixture will be admitted whose name indicates its therapeutic action, or is suggestive of the names of diseases or pathologic conditions in which it is to be used; after Jan. 1, 1909, this ruling is to be extended to simple articles, as well as mixtures.]

Rule 9 (Patented Products and Protected Names).—If the article is patented—either process or product, or both—the number of such patent or patents should be furnished to the Council. Furthermore, if the name of an article is registered, or the label copyrighted, the registration (trademark) number and a copy of the protected label should be furnished the Council. In case of registration in foreign countries the name under which the article is registered should be supplied.

Rule 10 (Unscientific and Useless Articles).—No article will be admitted which, because of its unscientific composition, is useless or inimical to the best interests of the public or of the medical profession.

EXPLANATORY COMMENTS ON THE RULES.

Introduction.—The Council on Pharmacy and Chemistry was established in February, 1905, by the American Medical Association primarily for the purpose of gathering and disseminating such information as would protect the medical profession in the prescribing of proprietary medicinal articles. In pursuance of this object the Council examines the articles on the market as to their compliance with definite rules which are designed to prevent fraud, undesirable secrecy and the abuses which arise from advertising to the laity. Such articles as appear to conform to the rules are admitted and their essential features are described in the annual publication of the Council, the "N. N. R.," if they come within the scope of this book. This description is based in part on investigations made by or under the direction of the Council, but in part also on evidence or information supplied by the manufacturer or his agents. Such interested statements are examined critically, and are admitted only if they appear to be in conformity with the evidence. It is, however, manifestly impossible for the Council to investigate the composition of every complex pharmaceutical mixture, or thoroughly to check every therapeutic claim; it can only give an unbiased judgment on the submitted evidence. Criticisms and corrections of the descriptions which may aid in the revision of the matter will be appreciated. The Council judges an article entirely by the facts existing at the time of its admission. Previous infringements of the rules (short of *intentional* fraud) do not prevent the favorable consideration of an article, provided that they have been thoroughly corrected. Infringements after admission, or the discovery that the Council's information was incorrect, will cause the acceptance to be reconsidered. The Council desires physicians to understand that the admission of an article does not imply a recommendation. It means only that no conflict with the rules has been found by the Council.

The Scope of the "N. N. R." and Appendix.—To aid physicians and manufacturers in deciding what articles come within the scope of this book, or, in other words, to enable physicians to recognize whether an article has been omitted because it does not need admission or because it has been rejected, the Council furnishes the following more detailed definitions:

Official Articles.—The status of the articles which are official in the United States Pharmacopeia or in the National Formulary naturally does not require the approval of the Council. Since authoritative information concerning them is readily obtainable, they have no place in the "N. N. R." To avoid confusion with non-official substances marketed under similar names the Council recommends that they be prescribed by their official Latinized title followed by the abbreviation "U. S. P." or "N. F.," thus: Tincturæ Nucis Vomicæ U. S. P. 5 c.c., Elixir Gentianæ N. F. 95 c.c.

"Trade names," protected or otherwise, for these articles will not be recognized by the Council unless they antedate the recognition of the article in the United States Pharmacopeia or National Formulary. Nor will non-essential modifications of official or non-proprietary preparations be recognized. Essential and important modifications, however, will be accepted and will receive individual mention in the "N. N. R."

Substances Described in the "N. N. R."—In the body of the book will be described simple proprietary substances and their preparations when these are marketed by the original manufacturer; proprietary mixtures if they have originality or other important qualities which entitle them to such place; and important non-proprietary unofficial articles. The Council recommends that when these latter are prescribed, that they be indicated by the abbreviation "N. N. R.," thus insuring to the prescriber the quality of these articles laid down in the book.

Proprietary Mixtures.—A mixture will be considered as proprietary, and therefore requiring consideration by the Council and admission to the book or appendix, if it contains any proprietary article; if it is marketed under a name which is in any way protected; or if its manufacturer claims for it any unusual therapeutic qualities. All proprietary mixtures which are marketed in conformity with the rules are listed in the appendix of the "N. N. R." under the names of their manufacturers. They are not admitted to the body of the book, save in the exceptional cases cited in the preceding paragraph.

Non-Proprietary Mixtures of Official Substances.—Since the ingredients of such mixtures do not require

the approval of the Council, and since the mixtures are not open to the proprietary abuses which called for the work of the Council, it is not necessary that they should be investigated and approved by the Council. The physician should judge whether such mixtures should be directed to be prepared by the pharmacist, or whether he is justified in ordering a ready-made preparation. If he decides to use a ready-made non-proprietary preparation he must judge for himself if it is marketed in accordance with the rules. (It should also be remembered that the application of trade names to any substance makes it proprietary.)

Objectionable trade names for official substances.—The application of "trade names" to official or established non-proprietary products tends to confusion and fosters many abuses. It can only be condoned if the "trade name" possesses priority as previously defined. Such trade names will therefore not be admitted by the Council except in those few cases in which the trade name has already come into extensive use. The protection of the manufacturers can be amply secured by appending the firm or "brand" name to the official name, and to this there can be no objection. Appended names or initials of manufacturers as in Mistura Rhei et Sodæ, X. Y. & Co.: Mixture of Rhubarb and Soda, "Jones;" Pills of Aloes and Iron, "Smith brand," are considered non-proprietary. Protected generic brand names shall not be regarded as proprietary. However, the preparation "Adrenalin suppositories" is proprietary because the name adrenalin itself is protected.

Unessential Modifications of Official Substances.—The subterfuge for obtaining proprietary rights over an official or established non-proprietary product, by introducing unessential modifications, also tends to confusion and abuses, and such articles will not be admitted by the Council. Essential and important modifications, however, will receive recognition. (The Council interprets the term "established non-proprietary product" to apply to a preparation of any formula which has been published through any recognized or reasonably accessible channel of publication, prior to its appropriation or modification by a manufacturer.)

EXPLANATORY COMMENTS ON THE RULES GOVERNING THE ADMISSION OF PROPRIETARY ARTICLES.

Rule 1 (Ingredients).—It is not only the right but the duty of the physician to know the essential composition of what he prescribes; the Council can not compromise on this proposition. Not only the potent ingredient but also the general character of the vehicle, the presence of alcohol, and the identity of preservatives, or of any other substance, whether added or present as an impurity, must be stated, if these can under any circumstances affect the action of the article. This generally does not mean the publication of such trade secrets as flavors or the details of the working formula. Furthermore, trade secrets will not be received as confidential by the Council, since it accepts information only with the distinct understanding that this may be freely published, at its discretion. Nor does the Council accept invitations to inspect factories; its concern is with the finished products.

On the other hand, the Council requires that the information be complete and accurate as to the medicinal ingredients. Unofficial constituents of proprietary mixtures must be submitted by the manufacturer in the regular way and must be approved by the Council before the preparations containing them can be admitted.

When it appears that a manufacturer has made a *deliberately* false statement concerning his product he is asked to furnish an explanation; and if this is not satisfactory the product will not be admitted, even if the false statement is subsequently corrected or omitted. This applies not only to statements made to the Council, but also to statements furnished to physicians by the manufacturer or his agents, even when these statements are in the guise of testimonials.

Rule 2 (Identity).—In order to avoid errors in the case of chemical compounds and to guard against adulterations, lack of potency or strength and the mistaking of one chemical for another, it is necessary to have at hand suitable tests. If these facts have appeared in the literature, or in standard text-books, reference to them will be sufficient; but with new chemicals, especially synthetics, the manufacturer or his representatives will be required to supply such tests for publication, together with the rational formula, or structural formula, if known, in order that an intelligent opinion of these products may be assured.

Rule 3 (Direct Advertising).—The impossibility of controlling the irresponsible claims which are usually made in advertisements to the public, the well-known dangers of suggesting by descriptions of symptoms to the minds of the people that they are suffering from the many diseases described, the dangers of an unconscious and innocent formation of a drug habit, and the evils of harmful self-medication, including the dangers of the spread of many infectious and contagious diseases when hidden from the physician, and similar well-known considerations, are the reasons for discouraging, in the interest, and for the safety, of the public, this reprehensible form of exploitation.

In the case of subjects on which the public should be instructed, as the use of disinfectants and foods, such advertisements, if not in objectionable forms, are considered admissible.

We may divide the foods into three groups. The first group contains the ordinary foods, including the well-known breakfast foods. These do not come under the supervision of the Council in any way. The second group includes medicinal foods proper, such as predigested foods, which have a relatively low food value and which are characterized by a high alcohol or preservative content, and which frequently contain strictly medicinal substances, or food substances for which distinct therapeutic properties are claimed. These products should be used only on the advice of the physician, and the advertisements should be restricted as in the case of ordinary medicines. The third group includes a large and important class of manufactured products, such as invalid and infant foods, which in a sense stand between the first and second groups. The public has the same interest in these foods that the physician has, and usually has full information concerning them. While the primary recommendation of these articles should naturally come from the physician, it can not be expected that their continued use should depend on repeated prescriptions. Information concerning this group of foods would come naturally and properly from a physician, and the collection and dissemination of this information may very properly be included in the work of this Council. As the use of products in this class is an extended one, it is not proper to limit their advertising to medical journals, but the advertising should be permitted in the lay press so long as it is conducted in a manner compatible with the rules of the Council.

Rule 4 (Indirect Advertising).—It should be remembered that the sole intent of this rule is to protect the physician, so that in prescribing a proprietary medicine he need not unconsciously become an advertising agent of proprietors. The rule imposes no restriction on the legitimate methods of bringing a remedy to the atten-

tion of the profession, such as advertising in medical journals, circulars and other printed matter distributed solely to physicians. The rule applies only to the package as it may reach the patient. The naming of diseases on the label or package is not necessary, as is shown by the very large number of proprietary products which have been successfully introduced without resorting to this expedient. This method of popularizing a proprietary remedy with the laity is most objectionable, and should not be tolerated in any form. The Council considers therapeutically suggestive names (see Rule 8, b) as an unworthy expedient to the same end. It would prefer to have therapeutic indications omitted from the label and package, but does not insist on this point, because these are useful in some exceptional cases. It will be considered an infringement of the rule when an article is marketed in bottles which have the name of the article blown into the glass, or if otherwise the name or initials or other distinctive mark of the article are permanently stamped on the container, on the article itself, or are contained on the stoppers or seals. Articles which are marketed in any of these ways are not admitted. Readily removable labels are not objectionable. The Council does not countenance the use of an admitted article for advertising other articles which have not been admitted by the Council.

Rule 5 (Fraudulent Claims as to Origin).—No false or misleading statement in regard to an article can be permitted concerning the source or material from which it is made, or the persons by whom it is made. Some glaring frauds of this nature have been perpetrated in the past, and this rule is intended to prevent such imposition. The identity of the actual manufacturer of an article should be known, since the manufacturer is in part responsible for the quality of the product. No good reason can exist for concealing the identity of the manufacturer of a legitimate article: such concealment must be considered evidence of the doubtful character of a product or its method of exploitation.

Rule 6 (Fraudulent Claims as to Therapeutic Value).—This rule is intended to restrict the direct and indirect claims of the manufacturers or agents as to the therapeutic superiority of their products, to what is compatible with ascertained facts. The Council aims to be quite liberal in the application of this rule. There are honest differences of opinion as to many therapeutic questions. It is natural that a manufacturer should be rather partial toward his own product, and, since every one should be cautious in accepting such biased claims, a moderate degree of emphasis may not be objectionable. The Council, therefore, does not assume to censor any reasonable statements, especially when such statements are confirmed by responsible clinicians. Claims are often made, however, which are incompatible with common experience and which sometimes defy the laws of Nature. Claims which seem highly improbable will not be admitted by the Council unless the manufacturer supports them by evidence acceptable to the Council. In doubtful cases the Council acts on these questions under the advice, and with the cooperation of its staff of clinical consultants.

Rule 7 (Poisonous Substances).—For the information of the pharmacist or dispenser, and to enable him to safeguard the interests of the patient and the physician, all articles containing such potent agents as the poisonous alkaloids and other organic substances and the salts of some of the metals, should have the exact amount of these ingredients which is contained in the average adult dose stated on the label.

Rule 8 (Objectionable Names).—Many of the abuses connected with proprietary medicines are intimately associated with the more or less arbitrarily selected or "coined," usually protected, names. In the interest of those physicians who would prefer to employ a more rational nomenclature the Council advises the use of scientific names by the manufacturers, at least as synonyms. In view of the existing trade conditions, however, it does not insist on this except in such specific cases as explained below in which experience has shown the necessity of restrictions. These restrictions will be applied to all articles admitted after Jan. 1, 1909.

Pharmaceutical Preparations and Mixtures.—Since these, with rare exceptions, are not original in composition, there is no sufficient reason why they should be endowed with arbitrary names; on the contrary, it is important that the prescribing physician should be constantly reminded of the potent ingredients on which the actions of such preparations are based. It is particularly important that actively poisonous or habit-forming drugs be not disguised under an innocently worded title.

The Council recognizes, on the other hand, the right of discoverers of new synthetic products or active principles to name their discovery, and interposes no objection to arbitrary names for such products, so long as such names do not tend to advertise the product to the laity, as specified under Rule 8, b. It is desirable, however, that the coined names should indicate the chemical composition of the article. With synthetic chemicals the true chemical name should be stated, at least in addition to the trade name. If an article conflicts only with Rule 8 it may be admitted as soon as the manufacturer substitutes a name which the Council considers satisfactory.

Rule 9 (Patents, Trademarks, Copyrights, Etc.).—This information is desirable in determining the legal status of these articles and will permit their ready recognition in current publications.

Rule 10 (Unscientific and Useless Articles).—The Council has been justly criticized because its rules failed to exclude certain unscientific mixtures, whether of well-known or obscure substances. The use of articles which are unessential modifications of official or established non-proprietary articles is unscientific and serves no useful purpose. The Council, therefore, will not admit products which are scientifically unsound and which, therefore, must be considered useless or inimical to the best interest of the medical profession and the public. This class includes mixtures containing an excessive number of ingredients; those which contain substances of no probable therapeutic assistance to each other; those of no therapeutic value.

Sciatica from Lemonade.—F. Koren, of Christiania, writes to the *Tidsskrift for den norske Lægeforening*, August 15, asking whether others know of experiences similar to his with sciatica after taking lemonade. On three occasions he had a very severe, acute attack of sciatica, compelling him to remain in bed for a day, after drinking a glass of lemonade. His wife's aunt, in England, also suffers severe lumbago for several days every time she drinks lemonade, as he learned later. He experienced the intense sciatic pain almost at once after drinking his "lemon squash." Under salicylates and local heat the neuralgia vanished by the second day.

Therapeutics

HYPNOTICS.

It is impossible to enumerate the hypnotics in the order of their importance, as the importance of each individual drug varies with the condition to be combated; consequently the following are arranged alphabetically. The official hypnotic drugs are:

Bromids.	Paraldehyd.
Chloral.	Sulphonethylmethanum (trional).
Chloralamid.	Sulphonmethanum (sulphonal).
Hyoscin.	
Morphin.	

BROMIDS.

The bromids are used to produce sleep and to quiet the nervous system in conditions of irritability and excitation. Their action is largely as a sedative to the spinal cord, and also as a sedative to the cerebral cells. They are depressant to the circulation and, therefore, quiet circulatory excitement. Under their action the heart is slowed and the blood pressure falls; consequently in any condition of serious heart or circulatory weakness bromids are contraindicated. On the other hand, in any condition of inflammatory irritations of the cerebrospinal system they are indicated.

Their prolonged use tends to cerebral degeneration; consequently in old age and in mental debility or melancholia, or with symptoms of paresis bromids should not be used. Their prolonged use also tends to produce muscular weakness as well as weakened circulation, sluggish digestion, loss of appetite, and, generally, imperfect nutrition. Mental actions become sluggish, the eyes lose their luster, the face becomes pale, and actual anemia may develop. The perspiration is increased and may be irritating and sour. The whole condition is that of great depression. Such a chronic condition caused by the administration of bromids has been termed "bromism," but the term should be confined to the condition of chronic poisoning.

As the bromids are partially excreted through the skin, they often, directly or indirectly, irritate it, and acne or various papular or even wartlike eruptions can occur. The more carefully the body is cleansed with baths during prolonged administration of bromids the less likely is the skin to show eruption.

The over-action of a single dose of a bromid is shown by acute depression (lowered temperature, weak pulse, cold, clammy perspiration), impaired speech, tremor, profound sleep, perhaps stupor and, possibly, paralysis due to spinal depression.

The treatment of such a condition would be the application of dry heat, atropin and strychnin hypodermatically, black coffee by the mouth or rectum, and artificial respiration if it is needed.

Acute poisoning by bromids is rare, as a single dose to produce poisoning is rarely taken. The large doses often administered in epilepsy do not cause poisoning, as the patient has become tolerant to such dosage.

Bromids are indicated as follows:

1. To produce sleep.
2. In hysterical conditions without neurasthenia.
3. In acute cerebral excitement.
4. In inflammation of the meninges.
5. In convulsions caused by irritation of the brain or spinal cord (uremia, tetanus, hydrophobia).
6. In epilepsy.
7. As an antidote in strychnin or other convulsive poisoning.
8. To prevent cinchonism.

The only justification for administering bromids for a long period is in epilepsy, and in this disease it is a symptomatic treatment, though it seems at times to be curative. The size of the dose that should be used, the total amount and the length of time that the drug should be given must be decided by the symptoms of the disease and by the action of the bromids on the individual patient. However, by greatly diminishing the amount of sodium chlorid allowed in the food, it has been proved that therapeutic effects may be achieved from the bromids in epilepsy with much smaller doses than formerly were given.

As above stated, the eruptions on the skin caused by the continued use of bromids can be much abated or even abolished by the plentiful drinking of water and by daily hot baths. The coincident administration of arsenic is also often successful in preventing these eruptions.

There is no question that in hysterical conditions and conditions that simulate exophthalmic goiter (Graves' thyroid disease) bromids given for some time are of great value. They are also valuable in the nervousness and vasomotor disturbances of the menopause. The value of a bromid is probably not only in its actual sedative action on the nerve centers, but also by its quieting action on the thyroid gland, which in all of these conditions shows more or less hyperactivity. While in hysterical conditions bromids, even when administered for several weeks, may do nothing but good, it constantly must be borne in mind that their tendency is to cause debility and malnutrition that it may be difficult later to combat. The dose of a bromid to meet these indications is not large, from 0.50 gram (7½ grains) to 1 gram (15 grains), two or three times a day.

As a hypnotic, the dose should be at least 2 grams (30 grains), given from one to two hours before bedtime. More may be given if deemed advisable. A smaller dose is rarely of any utility. As a hypnotic, bromids should not be given for any great length of time. If a hypnotic must be given for a considerable time, some substitute must be used, so that a habit for bromids may not be acquired.

The bromids are valuable in preventing the unpleasant symptoms from large doses of quinin. The coincident administration of three grains of a bromid for every one grain of quinin, *i. e.*, 1 gram (15 grains) of a bromid to 0.30 gram (5 grains) of quinin, will prevent cinchonism. Of course it would be inadvisable to give sufficient bromid to counteract the effect of the enormous doses of quinin given in pernicious malaria, but in ordinary intermittent fever during the period of the administration of fair doses of quinin to patients very susceptible to it, bromids are satisfactory.

The drugs whose physiologic actions are more or less similar to bromids are those that are termed depressomotors. They are chloral, physostigma (calabar bean), gelsemium and conium. Chloral, however, is the drug that acts most similarly to the bromids and may be substituted for them both as a hypnotic and as a cerebrospinal depressant.

The official bromids are:

Ammonii bromidum.	Sodii bromidum.
Calcii bromidum.	Strontii bromidum.
Lithii bromidum.	Zinci bromidum.
Potassii bromidum.	

There is no reason for using the lithium, calcium or zinc bromid.

Strontium bromid is supposed to have a little less deleterious effect on the digestion than the other bromids have. The difference is so slight, however, that there is no good reason for using it.

The ammonium bromid is more disagreeable than the potassium or sodium bromid, and therefore is not often used. The pleasantest to take is the sodium salt.

The sodium and potassium bromids are the ones most frequently used, and of these the potassium salt seems slightly more hypnotic, but if long given is more depressant to the circulation, as potassium is more of a heart muscle depressant than is sodium. Consequently, for prolonged use the sodium bromid is best, except, perhaps, a combination of potassium and sodium bromids. It is thought by some physicians that a combination of bromids in small doses acts better than an equivalent large dose of a single bromid.

Hydrobromic acid should never be used as a substitute for a bromid. While it causes bromid action, it is acid and therefore more irritant to the gastrointestinal tract. There is no good reason for using hydrobromic acid.

The following preparations are found in the National Formulary:

ELIXIR AMMONII BROMIDI: Each teaspoonful represents 0.30 gram (5 grains) of ammonium bromid.

ELIXIR CALCII BROMIDI: Each teaspoonful represents 0.30 gram (5 grains) of calcium bromid.

ELIXIR LITHII BROMIDI: Each teaspoonful represents 0.30 gram (5 grains) of lithium bromid.

ELIXIR POTASSII BROMIDI: Each teaspoonful represents 0.60 gram (10 grains) of potassium bromid.

ELIXIR SODII BROMIDI: Each teaspoonful represents 0.60 gram (10 grains) of sodium bromid.

LIQUOR MAGNESII BROMIDI: Each teaspoonful represents 0.5 gram (7½ grains) of magnesium bromid with syrup aurantii.

MISTURA CHLORALI ET POTASSII BROMIDI COMPOSITA: Each teaspoonful contains about 0.80 gram (12 grains) each of chloral hydrate and potassium bromid, and 0.008 gram (⅛ grain) each of the extracts of cannabis indica and hyoscyamus.

PULVIS POTASSII BROMIDI EFFERVESCENS: A heaping teaspoonful contains about 0.65 gram (10 grains) of potassium bromid.

PULVIS POTASSII BROMIDI EFFERVESCENS CUM CAFFEINA: A heaping teaspoonful represents about 0.65 gram (10 grains) of potassium bromid and 0.065 gram (1 grain) of caffein.

SYRUPUS BROMIDORUM: Each teaspoonful contains 1 gram (15 grains) of the mixed bromids of potassium, sodium, ammonium, calcium and lithium in compound syrup of sarsaparilla.

The potassium and sodium bromids are best administered in plain water, though they may be given in effervescing water if preferred. Any syrup makes the salty taste of the sodium bromid or the flat taste of the potassium bromid more disagreeable.

Bromid tablets should never be swallowed whole, as these concentrated salts may seriously irritate the stomach and cause severe pain and even pseudo-angina pectoris, and may even cause an ulcer of the stomach. Hence, whenever bromids are taken they should be ordered thoroughly dissolved and well diluted.

R.	gm. or c.c.		
Sodii bromidi	20	or	ʒv
Aquæ	100		fʒiv

Sig.: Two teaspoonfuls in water, two hours before bedtime.

ARSENIC.

It has long been known that while arsenic is often used in anemias it does not *per se* increase the hemoglobin or the output of red blood corpuscles, although it has many times caused clinical improvement in various blood diseases, notably in pernicious anemia. At times it seems to increase the number of white blood corpuscles, and at other times, in leukemia, has been shown to diminish them. The administration of arsenic has not seemed to increase the production of red blood corpuscles in normal animals.

While iron is the most satisfactory treatment in chlorosis, other drugs or salts are often as successful in the treatment of this condition, notably salines, bowel antiseptics, thyroid and arsenic. The disturbance in chlorosis seems to be due to a disturbed physiologic chemistry of the iron from the food to the red blood corpuscles, and other salts may sometimes correct this chemical error as well as an iron salt.

Arsenic has been supposed to act as a stimulant to the bone marrow, and hence perhaps in certain conditions increases the red blood corpuscle output. It also seems to be a stimulant to the thyroid, and that gland probably takes some part in blood formation.

Dr. James A. Gunn, Edinburgh, Scotland, in the *British Medical Journal*, July 18, 1908, presents his results from experimentation with this drug.

He suggests that in studying pernicious anemia and the etiology of this condition we look to a weakened condition of the stroma of the red corpuscles as a probable cause of their untimely destruction rather than to the organs that produce the red corpuscles or to the contents of the red corpuscles. The hemoglobin content of the red corpuscles in pernicious anemia seems to be perfect or even increased in amount. The stroma of the cells contains considerable lecithin and cholesterin, and if not enough of these substances are in the system the stroma can not be well formed.

Lecithin also seems to be a stimulant to the red bone marrow, and in various conditions of anemia the feeding of red bone marrow preparations or the administration of lecithin preparations has often improved the anemia.

Anything that could make the stroma of the red corpuscles less liable to destruction would probably improve the condition of pernicious anemia. Gunn finds by experiments that very dilute solutions, even 1 to 400,000 parts of arsenic (Arseni trioxidum) mixed with blood, will prevent the destruction of the red corpuscles when treated with distilled water. Distilled water causes destruction of the red cells when added to blood. If this blood was previously treated with arsenic solution, the destruction becomes less and less rapid, depending on the strength of the arsenic solution: the greater the strength, up to 1 to 50,000 dilution, the greater the ability of the stroma of the cells to withstand the destructive action of water. Gunn finds by estimation that it is possible with ordinary good-sized doses of arsenic to cause a solution of arsenic in the blood equal to 1 part to 400,000. He thinks that this is the reason of the prevention of red corpuscle destruction that is the cause sometimes of the improvement in pernicious anemia from the arsenic.

He also thinks, as arsenic in the blood has not been proved to act on malarial organisms, that its value in malarial fevers is due to preventing the parasites from entering the red corpuscles and destroying them.

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[For other information see second page following reading matter]

SATURDAY, SEPTEMBER, 26, 1908.

THE CAMPAIGN AGAINST TUBERCULOSIS IN SWEDEN.

An official communication to the International Congress on Tuberculosis in Washington this week, from the Antituberculosis Association of Sweden,[1] reviews the progress of the crusade against the disease in that country.[2] The movement may be traced back to 1896, when the Swedish Medical Society took the initiative and pointed out the necessity of establishing sanatoria in the country for the treatment of tuberculous patients. This object was at last secured through the generosity of King Oscar II, who devoted to it the jubilee fund amounting to about $583,000.

Another movement which has greatly promoted the antituberculosis campaign is the National Antituberculosis Association, which was founded in 1904 and now has a membership of about 22,000, a very respectable number when it is remembered that Sweden is a small country, its population numbering only about 5,300,000. All classes of the population are represented in this association and the fees are so small as to allow even the working classes to belong to it, a permanent membership costing $26.00 and annual dues being only 53 cents. The association receives income from membership fees, from gifts and from the sale of the so-called charity stamps, which are a profitable source of revenue. This association does not undertake to cure the sick or to treat consumptives, or in any way to usurp the functions of the municipality, but confines its efforts mainly to education. Three methods are chiefly employed: The first consists of lectures, for which the lecturers receive a moderate fee. These lectures are supported by the press and are well received by the people. They are practical and a distinct effort is made at each lecture to explain and recommend the methods and work of the association. During the years 1904 to 1907 883 lectures have been given, and these have been attended by about 147,600 persons. Secondly, in Stockholm a museum of tuberculosis has been established which serves the purpose of ocular demonstration in the results of the disease and the methods of fighting it. The third method is the free distribution of pamphlets to soldiers, students, societies, magazines and newspapers and their sale at a moderate price. The association publishes a quarterly journal for the information of those interested in the antituberculosis movement.

One of the difficulties against which the association has had to contend is the "consumption terror," an unreasonable fear of the disease and everything connected with it, which has been aroused by this propaganda, and to counteract this feeling a special pamphlet has been published. The cooperation of the press in this campaign has been secured to a gratifying extent. One commendable feature of the association's work is the attempt to provide for the training of physicians who may have to deal with this disease. For this purpose the directors of the public sanatoria of the jubilee fund have extended to physicians nominated by the Antituberculosis Association the privilege of two months' courses at some of the sanatoria.

The government has made a statistical investigation of the prevalence of the disease, which resulted in showing about 30,000 consumptives in the country, of whom about 10,000 die annually, giving a death rate about the same as that of other countries. The government then took the important step of furnishing free sites for the building of sanatoria from the public lands and advancing half the cost of building, with a maximum of about $265 a bed. In addition, provision was made for the appropriation of about 13 cents a day per patient toward the maintenance of these institutions. Reports of deaths from tuberculosis and disinfection of the premises at public expense are proposed, but it is not thought desirable to require reports of cases. It is also proposed to exclude tuberculous persons from the dairy business and to forbid their employment as wet-nurses or school teachers, and tuberculous children may be excluded from the schools. Poor-law authorities are to be required to see that children whom they board out do not run the risk of contracting tuberculosis.

Tuberculosis dispensaries are being established in the larger cities and serve a useful purpose in the instruction of patients and their relatives. A number of the methods pursued in Sweden are somewhat peculiar and receive an extended notice. It is natural in so small and poor a country that some of the methods found practicable in other countries can not be carried out.

Ragnar Friberger, from some experiments undertaken by him, reports that if the clothing and person of a consumptive are kept strictly clean there need be no fear of the clothing becoming a source of infection. But, on the other hand, the neglect of these rules is proved to result in the clothes becoming infected. Prof. Josef Svensson states, as the result of experiments to determine whether or not tuberculosis can be communicated by the inhalation of dust containing tubercle bacilli, that tuberculous matter is readily absorbed into the lungs in a dry condition and that direct infection of the lungs is the way in which tuberculosis most frequently makes its appearance in cattle. From an investigation of the

1. The Struggle Against Tuberculosis in Sweden: A Publication Dedicated to the International Tuberculosis Congress in Washington. Issued by the Swedish Government, Stockholm, 1908.

2. For a previous review of the work, see THE JOURNAL, Dec. 7, 1907, p. 1930.

frequency of tuberculosis in different parts of Stockholm, in 1906, as compared with density of population and economic position, J. E. Johansson and R. Moosberg draw the following conclusions: Consumption is most frequent in those parts of the town where the rents are lowest and the population densest. The amount of house rent per fireplace regularly decreases with the increase of frequency of consumption, and the percentage of "poor" among the cases observed rises with the same regularity. The number of inhabitants per 100 fireplaces increases with the frequency of consumption. An investigation tending to throw light on the relation of bovine to human tuberculosis was made in the parish of Lower-Lulea, a district comprising 2,293 inhabitants. Of these 1,498 were examined and tuberculosis either of the lungs or of glands was found in 701. On the other hand, bovine tuberculosis was found to be entirely absent from the district.

An especially insanitary arrangement for sleeping is found in some parts of Sweden. While the houses are of good size they are not utilized to their full capacity. In the winter the inhabitants climb into beds attached to the wall which are closed by a door (so-called cupboard beds). Experiments are being made in the building of model tenements for working people and also in the attempt to provide for the healthy children of consumptive parents, so that they shall run as little risk as possible of contracting the disease.

The encouraging thing in this valuable communication to the congress is in the fact that *pari passu* with the advance of these prophylactic methods the tuberculosis mortality of Sweden is shown to be progressively diminishing. This demonstration of the effects of intelligent sanitation, limited as it necessarily is by the smallness and meager financial resources of the population, is a credit to the country and should stimulate other countries of greater scope and lesser limitations to renewed and at least equally successful endeavor

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HUMAN SERUM IN CEREBROSPINAL FEVER.

Much progress has been made during the last few years in our knowledge and treatment of epidemic cerebrospinal fever. The most conspicuous event in the recent history of this dreaded disease is the introduction, by Wassermann in Germany and by Flexner and Jobling in this country, of active therapeutic sera. It is not the present purpose to discuss the mode of action of these sera or the results obtained by their use, but rather to direct attention to recent studies into the reactions that occur in patients suffering from cerebrospinal fever and to certain practical deductions from the results. The results obtained by Davis[1] show that while the serum of normal human beings may contain meningococcocidal substances as well as opsonins for meningococci, both these specific properties are markedly increased in the course of meningitis. Houston and Rankin[2] found that from the sixth day onward all the patients examined showed a marked increase in their opsonic index for meningococci, and McKenzie and Martin[3] noted that while the serum of normal human blood in many cases contains meningococcocidal substances these substances are certainly increased in the blood of patients with acute or chronic meningococcal meningitis.

Davis as well as McKenzie and Martin found that normally the cerebrospinal fluid is totally devoid of meningococcocidal properties, and this observation, coupled with the knowledge of the antimeningococcal power of the blood, naturally suggested intraspinal injections of human serum in patients suffering from epidemic meningitis. Davis used normal fresh human serum in two cases, eight and ten cubic centimeters being injected after first withdrawing a larger quantity of cerebrospinal fluid. One patient recovered and the other died, and the only deduction permissible would seem to be that the serum in no way did harm. McKenzie and Martin used serum from patients who had recovered from cerebrospinal fever: this treatment was applied in fourteen acute and two chronic cases of meningitis. They also used in two chronic cases the serum of a patient who had recovered from pneumonia, and, furthermore, two patients with acute meningitis were injected intraspinally on the sixth and seventh days, respectively, with their own serum. These last two patients recovered; the four chronic patients all died; and of the fourteen treated with serum from recovered patients eight got well and six died. The authors state that the patients thus treated were unselected and cite figures showing that the recovery rate presented by the patients injected with human serum is much greater than that presented by other cases in the same hospital but not treated with serum—fifty such cases giving only four recoveries.

This work is not without practical bearing because it seems to reveal a source for antimeningococcal serum from which it may be possible to draw if other sources should fail. Whether serum from cases of meningitis is more potent in some way or other or safer than the serum from immunized animals is, of course, not known at present, and as yet we have no ready standard whereby to measure the actual value of any antimeningococcus serum. Antimeningococcus serum owes its properties to several distinct bodies, of which the most important probably is the antiendotoxin. The great toxic action of the meningococcus is well shown in the experiment by Davis in which he obtained a prompt and profound reaction in twenty minutes by injecting dead meningococci into a normal person; a profound intoxication resulted with violent headache, some delirium, vomiting, and later herpes and severe acute nephritis developed,

1. Jour. Infect. Dis., 1907, iv, 558.

2. Lancet, 1907, 172, p. 1213.
3. Jour. Path. and Bact., 1908, xii, 539.

but there were no special meningeal symptoms. The amount injected and the meningococcus used were the same as injected in a case of meningitis; in the latter, however, no special reactions followed the injection, showing that probably the patient had acquired a marked immunity to the endotoxin of the meningococcus, and hence we might be permitted to infer that the serum of patients that have recovered from meningitis may contain antiendotoxin in considerable quantities.

DAMAGES FOR USE OF ALLEGED TESTIMONIAL.

The "Great American Fraud" articles in *Collier's Weekly* exposed the value to be attached to testimonials in favor of nostrums from prominent or locally well-known people, by disclosing some methods by which such testimonials are frequently obtained. Mr. Meriwether Smith, in the *Kentucky Medical Journal*, for August, gives an account of a fraudulent testimonial, published by the Foster-Milburn Company, of Buffalo, N. Y., in reference to Doan's Kidney Pills. It seems that Col. Jack P. Chinn, of Harrodsburg, Ky., is a man well known to almost every one in the neighborhood. It was with considerable chagrin, therefore, that he found a letter endorsing Doan's Kidney Pills, purporting to have been signed by himself and accompanied by his portrait, circulated in the neighborhood in a "patent-medicine" circular called Doan's Directory. Naturally this subjected him to considerable chaff and ridicule from his acquaintances, and even to a sinister suspicion that he must have sold his reputation to this quack concern, a course of action which in the south, at any rate, has always been regarded as disgraceful in one of social standing. Action was taken and various well-known legal expedients were practiced by the defendant's lawyers to head the action off, but fortunately they were defeated and a jury recorded a verdict of $2,500 in favor of Colonel Chinn. The question seems to have been fought along the line of invasion of the right to personal privacy, a right to which the courts in this country seem to be lamentably asleep. There are, however, two cases on record in which this right has been championed. In the first, a recent New York case, a young woman was refused damages for the unauthorized use of her picture as an advertisement, but the judge who delivered the opinion apparently confined it to the circumstances of the particular case, pointing out that a similar course in certain cases "might justly be found by a jury to cast ridicule or obloquy on the person whose picture was thus published." Moreover, three justices in a dissenting opinion pointed out that the right to privacy is the complement of the right to the immunity of one's person. In the other case, a man brought action in Georgia against an insurance company for the use of his picture in their advertisement. The justice who delivered the opinion, in which all the justices concurred, expressed himself as thoroughly satisfied "that the law recognizes within proper limits as a legal right the right of privacy, and that the publication of one's picture without one's consent, by another as an advertisement for the mere purpose of increasing the profit and gains of the advertiser, is an evasion [invasion?] of this right." Mr. Smith points out in the present article that the phenomenal success of "patent-medicine" companies in using forged and fraudulent letters recommending their nostrums, is largely due to the slowness of the courts in recognizing the right of the individual to recover damages for the invasion of this right of privacy.

THE MNEMIC THEORY OF DEVELOPMENT.

President Darwin's[1] inaugural address at the meeting of the British Association for the Advancement of Science, September 2, with its avowed adherence to the anti-Weismann doctrine of the inheritance of acquired characters, must have come as a shock to many of his hearers to whom this view had been only an exploded scientific heresy. It is evidence, however, that it will not down, and Darwin's adherence to it will be welcomed by a respectable quota of biologists, medical men and pathologists. If the study of plants has led Darwin to the belief in an inherited organic memory of the cells as an explanation of heredity and development, the idea ought, it would seem, to fit still better in the animal kingdom, where we are accustomed to expect psychic activities such as memory, even in their most rudimentary form, more than in plants. According to this mnemic hypothesis of Semon, as adopted by Darwin, somatic inheritance lies at the root of all evolution and involves the acceptance of the inheritance of acquired characters. He does not find that the idea of a special germ plasm, independent of the body cells generally, with its hypothetic determinants and biophores, accounts for the facts of ontogeny, that is, "the capacity of the ovum of developing into a more or less predetermined form"; it does not explain its automatic character. Development is to him an actual instance of habit. This mnemic theory, he holds, "makes the positive action of natural selection more obvious; if evolution is a process of drilling organisms into habits, the elimination of those that can not learn is an integral part of the process." The only basis for acceptance of any theory is that it best explains facts, and up to this time Weismann's theory has been so accepted by many. Darwin's attack on it will undoubtedly excite general comment and reopen the question with some who had considered it settled. Of those who have considered it settled there will perhaps be fewer among physicians than among biologists, for the clinical evidence of the inheritance of acquired characters is not always so easily disposed of as some writers on this subject have claimed.

1. Nature, Sept. 3.

Red Blood Counts.—J. R. Neal, Jr., and W. H. Buhlig, Chicago (*Quar. Bull. Northwestern Univ. Med. Sch.*), state that investigation made in young adults shows that the red cell count is distinctly above the average, 5,000,000, as usually accepted, and that the variations are large. This fact is of value in the proper interpretation of the significance of the total count.

Medical News

CALIFORNIA.

Deaths Charged to Careless Nurse.—At the San Diego County Hospital three deaths are said to have occurred, September 18, as the result of carelessness of a young nurse who neglected to make proper disposition of a glass of atropin solution which these patients took in mistake for their medicine.

Beriberi in Alviso.—Dr. William Simpson, San José, health officer of Santa Clara County and state health inspector, states that the news item which appeared in THE JOURNAL, September 5, regarding beriberi in Alviso is incorrect. In San José there is a society known as the Asiatic Exclusion League, which requested the supervisors of Santa Clara County to investigate the reported epidemic of beriberi on the Alviso meadows, where great quantities of berries and small fruits are grown. Dr. Simpson investigated the matter and found one chronic case of beriberi, which had existed for more than seven months and had been seen by many physicians. Dr. Simpson, in company with Dr. William C. Rucker, P. H. & M.-H. Service, and Dr. Roscoe A. Whiffen, representing the city of San José, made a thorough examination of the camps said to be infected, and came to the conclusion that there was no danger and there was no reason to fear an epidemic of beriberi.

Personal.—Dr. Charles C. Falk, William H. Wallace and John N. Chain have been appointed members of the Eureka Board of Health.——Major Edward R. Schreiner, Medical Corps, U. S. Army, in charge of the United States General Hospital Presidio, of San Francisco, has been appointed honorary professor of medicine in the University of California.——Dr. Andrew W. Morton, San Francisco, has returned from Europe. ——Dr. Oliver D. Hamlin, Oakland, has been appointed division surgeon for the Southern Pacific Railway, vice Dr. James P. Dunn, deceased.——Dr. Sydney R. Dannenbaum, pathologist at Mount Zion Hospital, San Francisco, has been appointed professor of principles and practice of medicine and clinical medicine at the College of Physicians and Surgeons, San Francisco.——Dr. Charles H. Bulson, Sacramento, has been elected chief surgeon of the Veteran's Home, Napa, vice Dr. Frank A. McMahon, resigned.——Dr. and Mrs. Harry F. Worley, Oakland, are taking a trip to Europe and the Holy Land.——Dr. and Mrs. Victor G. Vecki, San Francisco, have started for Europe.——Dr. E. Scott Blair, San Bernardino, has succeeded Dr. A. P. Williamson as medical superintendent of the Southern California State Hospital for the Insane, Patton ——Dr. Leon J. Roth, Los Angeles, has gone to Europe.

COLORADO.

McCormack in Colorado.—Dr. J. N. McCormack, chairman of the Committee on Organization of the American Medical Association, addressed the physicians of Boulder, September 11, on "A Plea for Such Cooperation of the Medical Profession and the People as Will Make Health More Contagious than Sickness." In the evening he delivered a public lecture on "Things About a Doctor the Public Ought to Know."

State Society Meeting.—At the thirty-eighth annual meeting of the Colorado State Medical Society, held in Denver, September 8-10, the following officers were elected: President, Dr. Peter J. McHugh, Fort Collins; vice-presidents, Dr. David H. Coover, Denver; D. Gilmore Thompson, Trinidad; Charles H. Graves, Canon City, and Orland P. Shippey, Saguache; secretary, Dr. Melville Black, Denver (re-elected), and treasurer, Dr. George W. Miel, Denver (re-elected). The society decided to meet at Steamboat Springs in 1909.

Personal.—Dr. Benjamin L. Jefferson, Steamboat Springs, who has represented Routt County in the legislature for the last ten years, has been made presidential elector on the Democratic ticket.——Dr. Mary E. Phelps, Canon City, was elected president of the Colorado Woman's State Medical Society, at its meeting, September 8.——Dr. I. B. Perkins and family, Denver, have returned from Europe.——Dr. C. F. Wilkins, Laporte, fractured his right arm while cranking his automobile, August 27.——The license of Dr. Henry H. Van Hummell is said to have been revoked on account of his acceptance of a fee on promise to cure advanced tuberculosis.

ILLINOIS.

Rabies from Bite of Squirrel.—Seven residents of Springfield recently bitten by a squirrel found to be suffering from rabies have gone to Chicago for treatment in the Pasteur Institute.

New Hospital for Evanston.—Work has been begun on the new hospital to be erected by the Sisters of St. Francis on Ridge Avenue, Evanston. The building will be four stories in height, 55 by 180 feet, and will cost $180,000.

Physician Fined for Violating the City Code.—Dr. Samuel R. Harwood, East St. Louis, is said to have pleaded guilty, August 31, to a charge of failing to report a birth to the health commissioner in compliance with the city code, and to have been fined $10 and costs.

Communicable Diseases.—Smallpox is reported from Spring Valley.——Gillespie is reported to have an epidemic of typhoid fever.——Scarlet fever and smallpox are reported to be epidemic at Taylorville.——Saint Anne is threatened with an epidemic of diphtheria and the opening of school has been delayed one week on account of the prevalence of the disease. ——In the Spaulding Institute, Nauvoo, 5 cases of scarlet fever are reported.——The opening of the schools of Abingdon has been postponed on account of the prevalence of scarlet fever.——The Girard Board of Health issued a proclamation, September 8, closing schools and churches and prohibiting other public gatherings, owing to an epidemic of diphtheria.

Chicago.

Home from Abroad.—Dr. and Mrs. John B. Murphy and family arrived, September 19, after spending the summer abroad.——Dr. and Mrs. A. H. Brumback have returned from Europe.

School Children Barred.—During the last week 700 pupils of the Chicago public school were barred from school, the result of examination by medical inspectors. Less than ten of this number had symptoms of contagious disease, but many had parasitic diseases.

Medical Inspection of Homes.—During the last seven weeks the 75 medical inspectors detailed to instruct mothers in the proper care of infants during the hot weather have visited 43,784 homes. The inspectors found 2,410 cases of illness and 24,702 unvaccinated persons.

Contagious Diseases.—There were reported to the department of health, during the week ended September 19, 275 cases of contagious disease, distributed as follows: Diphtheria, 83; scarlet fever, 79; typhoid fever, 52; tuberculosis, 23; whooping cough, 20, and measles 5.

College Opens.—The College of Physicians and Surgeons, the College of Medicine of the University of Illinois, will begin its twenty-seventh annual course of instruction September 28. The opening exercises will be held in the assembly hall of the college, Congress and Honore streets. Dr Channing W. Barrett will deliver the address.

Hospital Notes.—Orthodox Jews in Chicago have organized an association to erect and maintain a Jewish hospital on the West Side. About $10,000 has been already subscribed and a permanent building will be erected. The corporation is licensed as Miamonides Kosher Hospital Association, and it is proposed to carry out the orthodox Jewish dietary laws and habits in the institution.——On September 5 the health department is said to have instructed the police to close a private dispensary conducted by Mrs. Anna Breckler, 1151 North Robey Street.

Statement of Mortality.—There were 525 deaths reported from all causes during the week ended September 19, 93 fewer than for the corresponding week of last year and 31 fewer than for the preceding week of this year. The chief decline has been in child mortality, as among children under 5 years of age there were 70 fewer deaths than in the preceding week. Acute intestinal diseases caused 108 deaths; tuberculosis, 77; heart diseases, 44; violence (including suicide), 43; nephritis, 31, and consumption, 28. Of the communicable diseases, diphtheria and scarlet fever each caused 6 deaths and measles 2.

INDIANA.

Defendant Wins.—In the suit for alleged malpractice brought by Mrs. Eliza Bower, Sulphur Springs, against Dr. Burton O. Post, in which the plaintiff asked $2,500 damages for what she claimed to be improper treatment of a fractured arm, the jury returned a verdict for the defendant.

To and from Europe.—Dr. Edward J. McOscar, Fort Wayne, has returned from Europe.——Dr. Charles E. Barnett, Fort Wayne, sailed for Europe September 24.——Dr. Jacob O. Malsbury, Peru, has started for Europe.——Dr. and Mrs. Frank Randolph, Elkhart, have returned after three months abroad.

Ill, Injured and Operated.—Dr. Edwin Walker, Evansville, was operated on recently at Mercy Hospital, Chicago, for cyst of the thyroid gland.——Dr. William H. Wood, Mishawaka,

en route to New Mexico, was seized with hemorrhage September 14 and was removed to the Trinidad (Colo.) Hospital, where he is said to be in a critical condition.——Dr. Richard E. Holder, Columbus, fractured his arm recently while cranking his automobile.

LOUISIANA.

Medical College Opening.—The Medical Department of Tulane University of Louisiana will open for its new year the first week in October. Three new buildings will be opened at this session, the Richardson Memorial Medical Building, the Richardson Chemical Building, and the medical dormitory. Dr. George Dock, formerly of the University of Michigan, Ann Arbor, has arrived to assume his position as professor of medicine.

New Board of Health.—The governor has appointed a new State Board of Health, which will assume office October 1. Dr. D. Harvey Dillon, Many, has been named to succeed Dr. Clifford H. Irion, New Orleans, as state health officer. The other members of the board are Drs. Benjamin A. Ledbetter and Hermann Oeschner, New Orleans; Beverly W. Smith, Franklin; Theophilus T. Tarlton, Grand Coteau; Sidney D. Porter, Moreauville; and George W. Gaines, Tallulah, the latter being the only holdover member of the board.

Tuberculosis Clinic Established.—The new free clinic of the Louisiana Antituberculosis League is expected to be in operation in October. The staff of the clinic is made up as follows: Dr. J. George Dempsey, children up to 12 years of age; Drs. A. I. Weil and Otto Joachim, consulting laryngologists; Drs. Sidney K. Simon and Jacob A. Storck, consulting physician on contagious diseases; Dr. Edward L. McGehee, in charge of male service; Drs. Sarah T. Mayo and Edith Loeber, in charge of female service; Dr. Albert B. Brown, consultant on genito-urinary diseases; Dr. C. A. Bahn, consultant on diseases of the eye; Dr. Joseph N. Roussell, consultant on diseases of the skin; Dr. E. M. Hummel, consultant on diseases of the nerves; and Dr. Wallace J. Durel, especial consultant. The league has an antituberculosis exhibit at the Home Manufacturers' Exhibition.

MARYLAND.

Personal.—Dr. George Reuling, Baltimore, has returned from Europe.——Dr. James J. Mills, Baltimore, is in Paris.——Dr. Victor C. Cullen, formerly of Washington County, has been elected assistant to the medical superintendent of the Maryland Tuberculosis Sanatorium.

State Society Meets.—At the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, held in Ocean City, September 15-17, the state care of the insane was endorsed. The society has raised $25,000 for the completion of its library building, placing a mortgage on its property on Cathedral Street whereon the building is to be erected. The mortgage is for five years at 5 per cent.

Need of Hospital for Colored Insane.—The report of Dr. Arthur P. Herring, secretary of the State Lunacy Commission, urges the need of a hospital for negroes in connection with the State Hospital at Springfield. He will soon start on an inspection of almshouses on the Eastern Shore. He also proposes to compile for the use of the medical profession a hand book containing the laws relating to insanity and important information concerning private institutions for the care of the insane.

Baltimore.

Charge of Illegal Practice Dismissed.—The charge of practicing medicine without a license, made by the president of the State Board of Medical Examiners, against Dr. Joseph Reynolds has been dismissed, as it was shown that he had been a practicing physician prior to 1892 and thereby entitled to practice by the law passed in that year. He stated that he did not understand the law and had neglected to register as therein required.

MICHIGAN.

European Tourists.—Drs. Jean A. Vernier and Minta Proctor Kemp, Detroit, have returned after spending the summer abroad.——Dr. Henry M. Cunningham, Marquette, has returned from abroad.——Dr. and Mrs. Harry J. Hornbogen, Marquette, sail for Europe this month.

Tent Colony Established.—A tent colony has been established in the suburbs of Kalamazoo for advanced and highly contagious cases of tuberculosis. Seven Ottawa tents, one pavilion and one shack for four patients were put up within two weeks after "Blue Star" day, held under the auspices of the local antituberculosis society, when $700 was raised. It is expected that the colony will be turned over to the health board of the city in due course.

Medical Society Meets.—The twelfth annual meeting of the Upper Peninsula Medical Society closed at Marquette, September 3. The following officers were elected: Dr. Alfred W. Hornbogen, Marquette, president; Drs. Edward T. Abrams, Dollar Bay, and George Bjorkman, Gladstone, vice-presidents; and Dr. William D. Whitten, Baltic, secretary. The next meeting will be held in Calumet. The society by resolution requested that the Upper Peninsula be represented on the State Board of Health and that Dr. Oscar C. Breitenbach, Escanaba, be appointed the member for the peninsula.

MISSOURI.

Will Add to Sanitarium.—Dr. Charles R. Woodson has commenced construction of an addition to his sanitarium in St. Joseph. The building will be a two-story brick structure, will accommodate about 25 patients, and will cost about $20,000.

Personal.—Dr. George R. Highsmith, Carrollton, is suffering from angina pectoris.——Dr. William Weiss has been appointed vaccine physician by the health department of St. Louis.——Dr. Thomas E. Graham has resigned as assistant city physician of St. Louis.——Dr. Walter S. Wheeler has been appointed health commissioner of Kansas City, and Drs. George P. Pipkin, Carl A. Jackson, J. Park Neal, W. T. Thornton, Earl C. Reiger and George Ringle have been appointed physicians in the hospital department of Kansas City.

NEBRASKA.

Tag-Day Plan.—The Clarkson Hospital Association held a Tag Day, September 9, to raise $6,000 to complete the $20,000 fund necessary for the erection of the hospital.

Returned from Siam.—Dr. Paul G. Wooley, who for the last five years has been director of the Siamese Government Serum Laboratory in Phrapatoom and chief inspector of health and medical advisor to the minister of the interior, has accepted the position of associate professor of clinical pathology in the University of Nebraska College of Medicine, Omaha.

NEW MEXICO.

New Sanatorium.—Alamo Cottage Sanatorium for the Treatment of Tuberculosis, Alamagordo, is said to be an assured fact, as the founder, Mr. W. A. Reed, has bought 20 acres of land one mile and a half from Alamagordo on which to locate the sanatorium, and as work has already been commenced on the administration building.

State Society Meeting.—The twenty-seventh annual session of the New Mexico Medical Society was held in Albuquerque, September 2 and 3. The following officers were elected: President, Dr. George K. Angle, Silver City; vice-presidents, Drs. John W. Elder, Albuquerque; Frances T. B. Fest, East Las Vegas, and Robert L. Bradley, Roswell; secretary and editor, Dr. George S. McLandress, Albuquerque; and treasurer, Dr. Charles G. Duncan, Socorro.

NEW YORK.

Fire in Insane Asylum.—The main building of the Long Island Home was partly destroyed by fire September 16, with an estimated loss of from $15,000 to $20,000. There were 90 inmates in the building and it was with considerable difficulty that they were all hurried to places of safety.

Transfer of Insane.—On September 15, 250 female patients were taken from the Central Islip State Hospital and 50 men from the Kings and Park state hospitals, which are very much overcrowded, and transferred to the new institution for the chronic insane which has just been completed at Poughkeepsie.

New York City.

Rabid Dogs.—The Department of Health in 1906 received 101 rabid dogs for examination; in 1907 it received 181, and if the record keeps up for this year the number will be about 250. All these dogs had rabies.

Personal.—Dr. Fred H. Albee sailed for Europe September 16.——Dr. Francis Delafield returned from Europe September 15.——Dr. William T. Bull's condition has improved very much.——Dr. George B. McAuliffe fell from a street car September 15, sustaining a Pott's fracture of the right leg.

Low Death Rate Continues.—The death rate for the week ended September 12 was next to the lowest for the summer, being 14.38 per 1,000 population. For the corresponding week of last year it was 16.18. During this week above named 578 persons died in the tenements, while in 1907 there were 668

during the corresponding week. The number of deaths of children under 5 years of age was 428, as compared with 534 for the previous year.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended September 12, 423 cases of tuberculosis, with 153 deaths; 189 cases of diphtheria, with 19 deaths; 65 cases of measles, with one death; 93 cases of scarlet fever, with 3 deaths; 132 cases of typhoid fever, with 17 deaths; 5 cases of whooping-cough, with 3 deaths; 4 cases of cerebrospinal meningitis and 6 deaths; 14 cases of vacicella, and one case of smallpox, a total of 924 cases and 202 deaths.

Coney Island Camps.—The Health Department has ordered closed the camps at Coney Island because of alleged insanitary conditions prevailing there. It is claimed that there is a lack of sewerage and careless disposal of garbage. About one month ago the department gave warning that such a course would be pursued if the conditions were not remedied. There are about 250 tents on the beach. Lawyer Roy has obtained an injunction restraining the Health Department from interfering with the tent-dwellers. A hearing will be held next week.

NORTH CAROLINA.

Hines Memorial Meeting.—The Wake County Medical Association has decided to devote the October meeting to memorial exercises in memory of the late Dr. Peter E. Hines, Raleigh.

Personal.—By the will of the late Major S. G. Ryan, Raleigh, several thousand dollars were bequeathed to Dr. Hubert Haywood, Raleigh, in "appreciation of his long and faithful professional services in my family."——Dr. Myers G. Hunter, Charlotte, was operated on for appendicitis at St. Peter's Hospital, Charlotte, September 10.

Hospital Association Organized.—The ladies of Statesville have organized the Statesville Hospital Association to raise funds for Billingsley Hospital. This hospital, which was built by the Rev. A. S. Billingsley, is unendowed and, according to the provisions of the donor, must be maintained by funds provided by the citizens.

Hydrophobia.—Dr. C. A. Shore, pathologist of the State Board of Health, has recently pronounced as having had rabies a dog which is known to have bitten seven persons and many other dogs. The individuals who were bitten are now under treatment in the Pasteur Institute in Raleigh. The authorities are to be urged to enact most rigid and severe rules on the keeping and bringing of dogs within the city limits.

PENNSYLVANIA.

Personal.—Dr. Charles E. Woodward, secretary of the West Chester board of health, has been reappointed for a five years' term.——Dr. E. C. Dort, Pittsburg, sailed September 16, from Vancouver for Bangkok, and from there will go to his post in northern Siam, where he will have charge of Van Santvord Memorial Hospital at Lakawn.——Dr. George A. Ickes, Altoona, is said to be critically ill with typhoid fever.

Typhoid Fever.—In order to prevent the spread of typhoid fever the school board of Wilkes-Barre has adopted the rule that every pupil must bring a bottle of boiled water to school. ——The typhoid situation at Susquehanna is serious, as 14 cases have developed in the last ten days.——Butler is said to be threatened with another epidemic of typhoid.——There are many cases in Williamsport.

Communicable Diseases.—Nine cases of diphtheria were reported at Greensburg, and a portion of the Seventh Ward public school was closed September 18.——The government, the Pennsylvania Railroad and the traction companies are cooperating with the State Health Department in endeavoring to stamp out smallpox in the Cumberland Valley. Investigation by the state medical inspectors has revealed that cases supposed to have been chickenpox have existed for several weeks in Camp Hill and other places on the west bank of the Susquehanna River.——Dr. James C. Mewhinney of Spring City is reported to have been fined $52.20 by the health authorities for failure to report a case of typhoid fever.

State Society Meeting.—At the annual meeting of the Medical Society of the State of Pennsylvania, held in Cambridge Springs, September 14-17, the following officers were elected: President, Dr. George W. Wagoner, Johnstown; vice-presidents, Drs. James I. Johnston, Pittsburg; Glennis E. Humphrey, Cambridge Springs; Lowell M. Gates, Scranton, and Samuel Z. Shope, Harrisburg; secretary, Dr. Cyrus L. Stevens, Athens; assistant secretary, Dr. Theodore B. Appel, Lancaster; treasurer, Dr. Clarence M. Harris, Johnstown; trustees, Drs. George W. Guthrie, Wilkes-Barre; George D. Nutt, Williamsport, and Jefferson H. Wilson, Beaver; delegates to the American Medical Association, Drs. William L. Estes, South Bethlehem; Thomas D. Davis, Pittsburg; Fremont W. Frankhauser, Reading, and Samuel Wolfe, Philadelphia; and alternates, Drs. Alexander G. Fell, Wilkes-Barre; John C. Price, Scranton; Luther B. Kline, Catawissa; John B. Lowman, Johnstown; John B. McAlister, Harrisburg; William T. Williams, Mount Carmel, and Henry D. Jump and Wendell Reber, Philadelphia. Dr. James H. MacKee, Philadelphia, was made chairman of the section on medicine; Dr. George W. Guthrie, Wilkes-Barre, chairman, and Dr. Jonathan M. Wainwright, Scranton, secretary of the section on surgery; Dr. William C. Posey, Philadelphia, chairman, and Dr. Francis R. Packard, Philadelphia, secretary of the section on specialties. Bedford Springs was selected as the place of meeting for 1909.

Philadelphia.

Personal.—Dr. Clarence A. Veasey, who for several years has been assistant professor of diseases of the eye in Jefferson Medical College and ophthalmic surgeon to the Methodist Episcopal Hospital, has resigned.——Dr. James M. Anders, G. Oram Ring and Joseph F. Gibb have returned from Europe.

Medical Schools Open.—The annual opening exercises of Jefferson Medical College were held in the college buildings September 24. The annual address was delivered by Dr. Henry W. Stelwagon, professor of dermatology.——The annual opening exercises of the Medical Department of the University of Pennsylvania were held in the college September 25, in conjunction with the opening of the university in general.

Health Report. The total number of deaths reported for the week ended September 19 aggregated 425, a decrease of 20 from the preceding week and a decrease of 46 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 13; scarlet fever, 2; pertussis, 2; diphtheria, 5; consumption, 41; cancer, 22; apoplexy, 16; heart disease, 30; arteriosclerosis, 8; acute respiratory diseases, 30; enteritis, 49; hepatic cirrhosis, 8; appendicitis, 8; Bright's disease, 28; premature birth, 9; congenital debility, 15; senility, 6; suicide, 3; accidents, 19, and marasmus, 8. There were 161 cases of contagious disease reported, with 19 deaths, as compared with 149 cases and 23 deaths reported in the previous week.

SOUTH DAKOTA.

County Society Organized. The physicians of Beadle County have organized a county medical society on standard lines. This organization is the result of the visit to Huron of Dr. J. N. McCormack, Bowling Green, Ky., representative of the American Medical Association.

Antituberculosis Association Organized. After the meeting of the South Dakota State Medical Association, an Association for the Study of Tuberculosis was organized with the following officers: President, Dr. Francis M. Crain, Redfield; vice-presidents, Drs. Cheney C. Gross, Yankton; and A. E. Clough, Deadwood; secretary, Dr. George W. Potter, Redfield; and treasurer, Dr. E. C. Issenhuth, Redfield.

State Society Meeting.—The twenty-seventh annual meeting of the South Dakota State Medical Association was held in Yankton, September 2-4. On the first evening Dr. J. N. McCormack delivered a public address on the relations of the physician to the people. The following officers were elected: Dr. Samuel A. Brown, Sioux Falls, president; Drs. Thomas B. Smiley, Mitchell, and William E. Moore, Tyndall, vice-presidents; and Dr. Robert D. Alway, Aberdeen, secretary-treasurer. The next meeting will be held in Aberdeen.

WASHINGTON.

Society Favors New Law.—King County Medical Society, at its meeting August 31, requested its delegates to the State Medical Association to urge the passage of a resolution recommending that the next legislature amend the state law by adopting the "Arizona law," defining the practice of medicine more clearly.

Hospital Notes.—A maternity hospital has been erected at Hoquian by Dr. R. F. Hunter.—— Dr. Wilhelmy has purchased the old McCoy Hospital at Wenatchee.——The hospital at South Bend has been enlarged and remodeled. The contract for the Naval Hospital at the Puget Sound Navy Yard, Bremerton, has been awarded on a bid of $139,000.

Personal.—Dr. Charles M. Buchanan, for sixteen years physician and superintendent of Tulalip Indian Agency, has been made assistant superintendent of Haskell Institute, Lawrence, Kan.——Dr. Fred J. Whittaker has been appointed resident physician at St. Luke's Hospital, Spokane.——Dr. Elmer D. Olmsted, Spokane, is reported to be seriously ill with nephritis.

GENERAL.

Tuberculosis Conference.—The International Conference on Tuberculosis, made up of representatives of tuberculosis associations from all parts of the world, was held in Philadelphia, September 23-26. A report of the conference will appear in THE JOURNAL.

Personal.—Dr. Fred B. Bowman, assistant clinical pathologist in the United States laboratory in the Philippine Islands, has been appointed physician to the St. Paul Hospital.——Esther F. Hassan, who was nurse in the Spanish-American War, has been appointed chief of the corps of women nurses authorized for the Navy at the last session of Congress.

Warning Against Book Agent.—The Oxford University Press writes: "We wish to warn the medical profession against a man who is going about representing himself as our agent and calling himself O. G. Beauvang, and other aliases. He is about 5 feet and 5 inches tall, has a light complexion and is stockily built. We would be pleased to be informed of his whereabouts. He is not employed by us and has no right to take orders for us."

Coming Meetings.—Dr. Henry M. Bracken, Minneapolis, secretary of the Conference of State and Provincial Boards of Health of North America, announces the twenty-third annual meeting, to be held in Washington, D. C., September 25 and 26, under the presidency of Dr. Newell K. Foster, Sacramento, Cal.——The Southern Medical Association will hold its annual meeting at Atlanta, November 10 to 12, under the presidency of Dr. George C. Savage, Nashville, Tenn. The railways have granted excursion rates of a fare and a half plus 25 cents for the return trip. The tickets are on sale November 7 to 9, and are good for return until November 14, leaving Atlanta with three days' transit limit.——The next annual meeting of the Association of Seaboard Air Line Railway Surgeons will be held in Columbia, S. C., October 27 and 28, under the presidency of Dr. Louis S. Oppenheimer, Tampa, Fla.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

(By telegraph from our Washington Correspondent.)

WASHINGTON, D. C., Sept. 22, 1908.

The sixth International Congress on Tuberculosis was formally opened last night, over 1,500 people being present. On the stand were James S. Wilson, Secretary of Agriculture; Gen. George M. Sternberg, U. S. Army retired, treasurer of the congress; Dr. Lawrence M. Flick, Philadelphia, chairman of the central committee; Patten MacDougall, vice-provost, Edinburgh, Scotland; Dr. Abraham Jacobi, New York; Dr. Samuel G. Dixon, state health officer of Pennsylvania, and Dr. Eduardo Liceaga of Mexico.

Commissioner MacFarland presided and welcomed the visitors on behalf of the citizens of the district. He called attention to the new municipal hospital as an example of the best type of construction. He also referred to the important step achieved by securing the law requiring registration of those afflicted with tuberculosis and free examination of sputum.

ACHIEVEMENTS OF SCIENCE.

Commissioner MacFarland then introduced General Sternberg, who gave a history of the great achievements of science over smallpox, cholera, bubonic plague and yellow fever. He called attention to the frightful mortality from tuberculosis and predicted that the present congress and exhibition would stimulate the antituberculosis crusade in all parts of the country.

TUBERCULOSIS IN ANIMALS.

Secretary Wilson showed what measures the Department of Agriculture has undertaken toward the prevention of the importation of tubercular animals into the United States. He quoted statistics showing the percentage of tubercular cattle in the country, and closed by giving the method of inspection followed in the District of Columbia.

Dr. Samuel G. Dixon told of the crusade in Pennsylvania during the past year.

Dr. Henry G. Beyer, medical director United States Navy, spoke of American progress in the fight on tuberculosis, and paid a fitting tribute to the instructive contributions from abroad.

Dr. Lawrence F. Flick, chairman of the central committee, spoke of American progress in the fight on tuberculosis, and spoke hopefully of the prospect of greatly reducing the mortality from this disease. He extended an invitation to the audience to visit the exhibits and called attention to their elaborateness and the valuable instruction to be obtained from them.

The Exhibits.

Space is inadequate to describe the magnitude of the Tuberculosis Exhibition. Valuable and elaborate exhibits from all over the world are arranged for the inspection of the crowds of those interested. The most important ones noticed are briefly referred to below.

NATIONAL EXHIBITORS.

Argentina shows plans of her dispensaries and hospitals, as well as mortality charts and methods of educational instruction.

Austria contributes charts, books and pathologic specimens.

Belgium sends plans of hospitals and popular literature.

Brazil is represented by models, maps and mortality records.

Canada is represented by a magnificent series of pathologic specimens prepared at McGill University.

France sends microscopic specimens, to be demonstrated by Dr. Paul Courmont and Professor Arloing. Photographs and samples of drugs used in the treatment of tuberculosis are also shown.

Germany's exhibit is one of the most complete. It is presented in four sections. That of the German central committee consists of illustrations showing the pathology of tuberculosis, mortality records, photographs of various sanatoria, illustrations of sanitary dwellings and copies of literature. The Imperial Board of Health presents records of research work, maps and pathologic specimens. The various German insurance offices present maps, tables and charts. A prominent feature is a model of the workingmen's sanatorium of the national insurance office of Berlin at Beelitz, which accommodates nearly 1,200. The German Red Cross Society demonstrates the manner of combating tuberculosis by books and illustrations. The fourth section consists of private exhibitors, and includes many publications and instruments.

Great Britain is represented by valuable pathologic preparations contributed by the Royal College of Surgeons, the Museum of Westminster Hospital, St. George's Hospital, University College Hospital, the Western Infirmary of Glasgow, Humphrey Museum, University of Manchester and the School of Medicine of the University of Leeds. Prominent among these are Dr. Sidney H. C. Martin's specimens illustrating feeding experiments.

Japan is represented by books and charts from Kitasato's institute.

Russia exhibits pharmaceutical products.

Sweden shows maps and statistics and their antituberculosis methods. [In this connection the reader will be interested in an editorial in this issue on Sweden's work in the crusade. —ED.]

Switzerland shows charts, diagrams, photographs and reports.*

Uruguay shows stereoscopic views, photographs and charts.

THE PUBLIC SERVICES.

The United States Public Health and Marine-Hospital Service shows a large model of the tuberculosis sanatorium at Fort Stanton, N. M., models showing details of its arrangement, and a large number of wall charts illustrating tuberculosis from the standpoint of vital statistics. The diagnostic and therapeutic uses of electricity are shown by apparatus. The Service hygienic laboratory exhibits many pathologic specimens and demonstrates the growth of the tubercle bacillus on fruits and vegetables.

The United States Army, in its exhibit, shows models of special wards constructed at Fort Bayard, N. M., for tuberculous patients. Wall maps, charts and statistics are also shown.

The Medical Department of the Navy presents a model of its sanatorium at Las Animas, Colo., and many photographs illustrating fully the details of this hospital.

EXHIBITS OF GOVERNMENTAL DEPARTMENTS AND BUREAUS.

The Department of the Interior is well represented. The Smithsonian Institution and the Bureau of Indian Affairs show maps of Indian reservations with population, prevalence of tuberculosis, and photographs showing present living conditions where tuberculosis is prevalent. Plans of a new sanatorium for Indians are shown. The entire exhibit is an object lesson on the destructive influence of civilization on the American Indian.

The Department of Agriculture shows a number of specimens of experimental tuberculosis and presents many gross

pathologic specimens showing tuberculosis in various animals, and the manner in which it may be communicated.

The census office exhibits a complete set of its reports and many valuable comparative tables. Prominent features of this exhibit are a large wall map showing registration areas and diagrams demonstrating the international classification of causes of death. One of the interesting features of this exhibit is a punching and tabulating machine in full operation. The government printing office shows an apparatus for the disposal of sputa in crowded factories and workshops, consisting of an automatic device for disinfection and removal of sputa without the operator coming in contact with cuspidors.

STATE EXHIBITS.

Owing to lack of space it is impossible to more than mention the splendid showing made by the exhibits of the various states. The state exhibits show how thoroughly the profession is aroused on the subject.

Colorado has a large exhibit. Special exhibits have been given by various Colorado sanatoria.

Connecticut shows plans of many sanatoria.

The District of Columbia shows the plans of the new municipal hospital which has many new features. A concrete cottage for workmen to cost $1,200 is on exhibition. Many kinds of apparatus are shown.

Maryland has a large exhibition of photographs, literature and pathologic specimens from various colleges and institutions.

Massachusetts has a series of photographs showing the factory conditions in that state, and also a very large and complete exhibition contributed by the hospital associations and Boston University.

New York and Pennsylvania present complete and thorough exhibitions of actual work being accomplished in these states and deserve great credit.

Maine, Michigan, Minnesota, Ohio, Rhode Island and Wisconsin have exhibits that reflect credit to their communities in this, the greatest congress of the century.

It really amounts to a world's fair on tuberculosis. It is illustrative of what is being done around the globe in the fight against tuberculosis. It is safe to say that no such exhibition has ever been seen before.

Prizes Offered.

Reference has already been made to the prizes offered in connection with this exhibition. The following is a more complete list of these awards than was given in our previous issue:

A. The Hodgkins Fund Prize of $1,500, offered by the Smithsonian Institution, for the best treatise on the "Relation of Atmospheric Air to Tuberculosis."

B. A prize of $1,000 for the best evidence of effective work in the prevention or relief of tuberculosis, by any voluntary association, since the last International Congress in 1905.

C. A prize of $1,000 for the best exhibit of an existing sanatorium for the treatment of curable cases of tuberculosis among the working classes.

D. A prize of $1,000 for the best exhibit of a hospital for the treatment of advanced pulmonary tuberculosis.

E. A prize of $1,000 for the best exhibit of a dispensary or kindred institution for the treatment of the tuberculous poor.

F. A prize of $1,000 for the best exhibit of a furnished house for a family or group of families of the working class, designed in the interest of the crusade against tuberculosis.

G. Prizes for educational leaflets. A prize of $100 is offered for the best leaflet submitted in each of the following classes:

For adults (not to exceed 1,000 words).
For teachers (not to exceed 2,000 words).
For mothers (not to exceed 1,000 words).
For indoor workers (not to exceed 1,000 words).
For dairy farmers (not to exceed 1,000 words).
For school children in grammar school grades (not to exceed 500 words).
Pictorial booklet for children in primary grades and in the nursery.

Besides the money prizes, gold and silver medals and certificates of award are offered in each of the instances named.

The Transactions of the Congress.

It is not too late to visit the congress and to secure membership. Aside from the opportunities afforded at the meetings in Washington, membership in the congress will secure the published transactions in four volumes, which will be of vast importance to any one wishing to keep himself abreast of the times in this important subject, as the papers read at the congress will cover practically all phases of tuberculosis, being interesting alike to the pathologist, the practicing physician, the health officer and the sociologist.

The coming week will be given to the scientific work of the congress, which will be carried on in seven sections. The principal events of these meetings have been announced in previous issues of THE JOURNAL (August 8, 22, 29, and September 12). We give below the program of the division devoted to the pathologic side of the subject. Much of the rest of the programs has already appeared.

Program of Section I. Pathology and Bacteriology.

MONDAY, SEPTEMBER 28, 2:30 P. M.

BIOLOGY OF THE TUBERCLE BACILLUS.

1. Remarks by the President of the Section, Dr. William H. Welch.
2. Election of Honorary Presidents of the Section.
3. Dr. Milton J. Rosenau, Washington: The Viability of the Tubercle Bacillus.
4. Prof. John Weinzirl, Ph.D., Seattle, Wash. The Action of Diffuse Light on *Bacillus tuberculosis*.
5. Dr. J. von Szabóky, Budapest-Gleichenberg: A Contribution to the Knowledge of the Cultural Characters of Tubercle Bacilli (in German).
6. Dr. N. Jancsó and Dr. A. Elfer, Klausenburg: Comparative Studies of the Practically Important Acid-fast Bacilli (in German).
7. Prof. S. Arloing and Dr. Paul Courmont, Lyons: New Homogeneous Cultures of Tubercle Bacilli (in French).
8. Prof. A. Rodet, Montpellier: The Virulence of the Tubercle Bacillus in Relation to the Clinical Development of Pulmonary Tuberculosis (in French).
9. Dr. A. Parker Hitchens, Glenolden, Pa.: A Chamber in Which Dried Tubercle Bacilli May be Handled Without Danger.

TUESDAY, SEPTEMBER 29, 9:30 A. M.

CHANNELS OF INFECTION, LATENT INFECTION, PREDISPOSITION, HEREDITY.

1. Prof. N. Ph. Tendeloo, Leyden: Channels of Infection.
2. Dr. Julius Bartel, Vienna: Concerning the Question of Channels of Infection (in German).
3. Dr. G. Kuss, Angicourt, France: Sources and Paths of Tuberculous Contagion (in French).
4. Dr. S. Bernheim, Paris: The Portals of Entry of Tuberculosis (in French).
5. Prof. Francis Harbitz, Christiania: Concerning Latent Tuberculosis.
6. Dr. Carl Hart, Berlin: The Predisposition of the Apices of the Lungs and the Law of Localization of the First Focus of Disease (in German).
7. Prof. A. S. Warthin, Ann Arbor, Mich.: The Present State of Our Knowledge Concerning Heredity in Tuberculosis.
8. Surgeon-General Simon von Unterberger, St. Petersburg: Heredity in Tuberculosis (in German).
9. Dr. J. von Szabóky, Budapest-Gleichenberg: The rôle of Inherited Predisposition in the Etiology of Tuberculosis (in German).
10. Prof. B. Stiller, Budapest: Pulmonary Tuberculosis and Asthenia Universalis (in German).

TUESDAY, SEPTEMBER 29, 2:30 P. M.

JOINT SESSION OF SECTIONS I AND II. OPSONIC INDEX, CONJUNCTIVAL AND CUTANEOUS TUBERCULIN REACTIONS, SERUM DIAGNOSIS.

1. Dr. T. W. Hastings, New York: The Opsonic Index in Certain Tuberculous Infections.
2. Dr. George P. Sanborn, Boston: The Opsonic Index in Early Diagnosis.
3. Dr. H. M. Kinghorn, Dr. D. C. Turchell, Dr. N. M. Carter and Mr. F. W. O. Werry, B.A., Saranac Lake, N. Y.: The Accuracy of the Tuberculin Opsonic Test and Its Value as a Control to Tuberculin Treatment in Pulmonary Tuberculosis.
4. Dr. Mary C. Lincoln, Chicago: The Tuberculin Opsonic Index in the Diagnosis and Treatment of Tuberculosis.
5. Dr. J. von Szabóky, Budapest-Gleichenberg: Opsonins and Their Value in Diagnosis, Prognosis and Treatment (in German).
6. Prof. A. Calmette, Lille: Concerning the Application of the Cutaneous and Conjunctival Tuberculin Reactions in the Diagnosis of Tuberculous Infections (in French).
7. Dr. C. von Pirquet, Vienna: Observations on the Cutaneous Tuberculin Reaction in 200 Children Examined Postmortem (in German).
8. Dr. A. Wolff-Eisner, Berlin: Cutaneous and Conjunctival Reactions (in German).
9. Dr. Arnold C. Klebs, Chicago: Cutaneous and Conjunctival Reactions.
10. Dr. E. R. Baldwin, Saranac Lake, N. Y.: Conclusions from 1,087 Conjunctival Tuberculin Tests.
11. Dr. Fernand Arloing, Lyons: The Ophthalmic Reaction (in French).
12. Dr. Ladislaus Detre, Budapest: The Application of the Differential Cutaneous Reaction in the Diagnosis, Pathology and Treatment of Tuberculosis (in German).
13. Dr. S. Trimescu, Roumania: The Ophthalmic Reaction with the Paratuberculins.
14. Dr. S. Trimescu, Roumania: The Prognostic Value of the Ophthalmic and Cutaneous Reactions.
15. Dr. Paul Courmont, Lyons: The Present State of Serum Diagnosis (in French).

WEDNESDAY, SEPTEMBER 30, 9:30 A. M.

INFECTION THROUGH THE SKIN. SOURCES OF INFECTION.

1. Prof. Jules Courmont and Dr. A. Lesieur, Lyons: Transcutaneous Inoculation of Tuberculosis (in French).
2. Dr. Isidora Spitzstein, Budapest: Contribution to the Question of Percutaneous Infection (in German).
3. Dr. Julius Bartel, Vienna: Concerning the Opportunity for Tuberculous Infection by Dust from Public Places (in German).
4. Dr. William H. Park, New York: Sources of Tuberculous Infection.
5. Dr. J. Héricourt, Paris: Danger from Persons with Unrecognized Tuberculosis (Apparently Healthy Bacillus Carriers); Prophylaxis (in French).

6. Dr. Alfred F. Hess, New York: A Study of Tuberculous Contamination of New York City Milk.
7. Dr. C. André, Lyons: Flies as Agents of Dissemination of the Bacillus of Koch (in French).
8. Dr. J. Woods Price, Saranac Lake, N. Y.: The Possibilities of Infection from Table Utensils at Sanatoria.
9. Dr. S. Matejin, Budapest: Concerning Opportunities for Infection (in German).
10. Dr. S. Bernheim, Paris: Relations of Air to Tuberculous Contagion. Sterilization of Air (in French).

WEDNESDAY, SEPTEMBER 30, 2:30 P. M.

JOINT SESSION OF SECTIONS I AND VII. THE RELATIONS OF HUMAN AND BOVINE TUBERCULOSIS.

1. Prof. Theobald Smith, Boston: The Relations of Human and Animal Tuberculosis, with Especial Reference to the Question of the Transformation of Human and Other Types of the Tubercle Bacillus.
2. Prof. G. Sims Woodhead, Cambridge, England: The Problems to be Solved in Dealing with Human and Bovine Tuberculosis.
3. Prof. S. Arloing, Lyons: Relations of Human and Bovine Tuberculosis (in French).
4. Prof. J. Fibiger and Prof. S. O. Jensen, Copenhagen: Human and Bovine Tuberculosis and the Tubercle Bacillus.
5. Dr. M. P. Ravenel, Madison, Wis.: Recent Developments in Regard to the Relations of Human and Bovine Tuberculosis.
6. Dr. Lydia Rabinowitsch, Berlin: Title to be announced.
7. Dr. R. M. Dinwiddie, Experiment Station, Ark.: The Susceptibility of Cattle to the Virus of Surgical Forms of Human Tuberculosis.
8. Dr. P. A. Lewis, Boston: Tuberculous Cervical Adenitis. A Study of the Tubercle Bacilli Cultivated from Fifteen Consecutive Cases.
9. Dr. Charles W. Duval, Montreal: Study of Tubercle Bacilli from the Tissues of Special Forms of Primary Cervical Adenitis in Man, with Particular Reference to Intermediate and Atypical Varieties of Bacilli.
10. Dr. William H. Park, New York: The Types of Tubercle Bacilli in Pulmonary Tuberculosis and Certain Other Forms of Tuberculosis in Human Beings. A Preliminary Report of Work Done by Drs. Woglom, Krumwiede and Montgomery.
11. Dr. J. N. Davalos and Dr. J. Cartaya, Havana: A Comparative Study of the Tubercle Bacillus of Human and Bovine Origin.

THURSDAY, OCTOBER 1, 9:30 A. M.

IMMUNITY.

1. Dr. E. R. Baldwin, Saranac Lake, N. Y.: The Problem of Immunity in Tuberculosis.
2. Prof. A. Calmette and Dr. C. Guérin, Lille: Concerning Immunity Against Tuberculosis (in French).
3. Dr. Julius Bartel, Vienna: Experimental Immunization Against Tuberculosis (in German).
4. Prof. Jules Courmont and Dr. A. Lesieur, Lyons: Contribution to Immunity in Tuberculosis (in French).
5. Prof. A. B. Marfan, Paris: Immunity of Man Against Tuberculosis (in French).
6. Dr. Gerald B. Webb, Dr. W. W. Williams, Colorado Springs, and Prof. M. A. Barber, University of Kansas: Immunity Production by Inoculation of Increasing Numbers of Living Bacteria, Beginning with One Organism.
7. Prof. A. Calmette, Lille: Tuberculins and the Measure of Their Activity (in French).
8. Dr. Camillo Calleja, Valladolid, Spain: Eupyrexia (in Spanish)

THURSDAY, OCTOBER 1, 2:30 P. M.

PROTEIDS OF THE TUBERCLE BACILLUS. IMMUNIZING SUBSTANCES. ENZYMES. CHEMICAL STUDIES.

1. Prof. Victor C. Vaughan, Ann Arbor, Mich.: A Study of the Proteids of the Tubercle Bacillus.
2. Dr. H. Noguchi, New York: The Action of Soaps on the Vitality and Immunizing Property of the Tubercle Bacillus. (To be read by Dr. Simon Flexner.)
3. Dr. T. Ishigami, Osaka, Japan: Tuberculo-Toxoidin and Immunizing Serum.
4. Dr. Eugene L. Opie, New York: The Part of Enzymes in Tuberculous Lesions.
5. Dr. Paul Courmont, Lyons: Humoral Properties of Tuberculous Exudates; Prognostic and Therapeutic Value (in French).
6. Dr. Fernand Bezançon and Dr. S. I. de Jong, Paris: Histochemical and Cytologic Study of Tuberculous Sputum (in French).
7. Prof. J. Nicolas, Lyons: Laboratory Aids in the Diagnosis of Cutaneous Tuberculosis (in French).
8. Dr. Alfred C. Croftan, Chicago: An Experimental and Clinical Study of the Calcium Metabolism in Tuberculosis.

FRIDAY, OCTOBER 2, 9:30 A. M.

PATHOLOGIC ANATOMY AND HISTOLOGY.

1. Prof. William T. Councilman, Boston: Some Considerations Concerning Lesions of Tuberculosis.
2. Prof. S. Arloing, Lyons: Tuberculous Infection According to the Pathologic Anatomic Criterion (in French).
3. Dr. Léon Bernard, Paris: Anatomic and Pathologic Study of the Non-Follicular Lesions of Tuberculosis (in French).
4. Dr. James Miller, Birmingham, England: Histology of Pulmonary Tuberculosis, with Demonstration. Discussion by Prof. G. Sims Woodhead, Cambridge, England.
5. Prof. J. Pavlot, Lyons: The Anatomic Process in the Initial Hemorrhage of Pulmonary Tuberculosis (in French).
6. Prof. R. Tripier, Lyons: Pneumonia in the Process of Pulmonary Tuberculosis (in French).
7. Prof. A. S. Warthin, Ann Arbor, Mich.: The Frequency of Healed Tuberculosis of the Mesenteric Glands, with Particular Reference to the Relationship Between Hyaline Deposits in These Glands and the Healing of Tuberculous Lesions.
8. Prof. J. George Adami and Dr. John McCrea, Montreal: Analysis of 1,000 Consecutive Autopsies in Montreal with Reference to the Incidence of Tuberculosis in the Different Organs.
9. Dr. A. R. Landry, Montreal: Incidence of Chronic Pleurisy in 1,400 Consecutive Autopsies in Montreal and Its Relation to Tuberculosis. (To be read by Prof. Adami.)

FRIDAY, OCTOBER 2, 2:30 P. M.

PATHOLOGIC ANATOMY AND HISTOLOGY (*Continued.*)

1. Dr. Josef Kertesz, Budapest: The Histogenesis of Tubercle of Bone (in German).
2. Dr. Joseph Walsh, Philadelphia: The Kidneys in Tuberculosis of the Lungs.
3. Dr. D. J. McCarthy, Philadelphia: Tuberculosis of the Spinal Meninges, with a Consideration of the Mode of Infection of These Structures.
4. Prof. E. Boinet, Marseilles: Tuberculosis and the Suprarenal Capsules (in French).
5. Dr. C. Esmonet, Châtel-Guyon, France: Experimental Studies of Tuberculosis of the Testicle (in French).
6. Dr. O. Amrein, Arosa, Switzerland: Periostitis et Adipositis Tuberculosa Toxica Multiplex.
7. Dr. Walter Altschul, Prague: The Pathology of Peritoneal Tuberculosis (in German).
8. Dr. J. T. Ullom, Philadelphia: The Liver in Tuberculosis.

FOREIGN.

Centennial of Medical Book Publishing Firm.—The firm of F. C. W. Vogel of Leipsic celebrated three years ago the one hundred and seventy-fifth anniversary of its foundation. It has recently celebrated the centennial of the assumption of the present firm name. It has long published a large number of important scientific periodicals, especially *Archives* and *Zeitschrifts*.

Medical Research on Prehistoric Material from the Nile Valley.—A cablegram from London states that the council of the Royal College of Surgeons has given permission to Dr. Elliot Smith and Dr. Wood Jones, of the Cairo Medical School, to carry out, in the museum of the college, an examination of a collection of mummies and parts of mummies found during excavations in the Upper Nile Valley. The material is representative of peoples inhabiting Nubia in ancient times, and is expected to throw light on their pathology and the results of their surgery. The Egyptian government has expressed its willingness to present the collection to the museum of the Royal College of Surgeons.

The Cholera Situation.—Late telegrams give alarming accounts of the spread of cholera in Russia. For the twenty-four hours beginning September 20, the Municipal Hospital, St. Petersburg, reported 380 cases with 155 deaths, and these did not include the number treated in the military and suburban hospitals for the same period. Dispatches received in St. Petersburg from three provinces report 488 new cases with 201 deaths in the last twenty-four hours, Rostov-on-the-Don furnishing 182 cases and 80 deaths.——The hospital situation is reported to be critical, as all hospitals are full and are turning away patients.——The government has threatened to proclaim martial law and the aldermanic council of St. Petersburg has appropriated $250,000 to enlarge hospital space and to purchase and distribute disinfectants and expedite the interment of the dead. Several public schools have been closed and their rooms transformed into hospital wards.——The official bulletin states that there were 349 cases and 128 deaths between noon, September 18 and noon, September 19, and from noon, September 19, to noon, September 20, 398 cases and 141 deaths.——Official notice in the last issue of the *Münchener medizinische Wochenschrift* states that from August 8 to 14, 538 cases of cholera were reported in Russia with 270 deaths, and for the week of August 15-21, 1,145 cases with 517 deaths.——The consul general at St. Petersburg, under date of August 22, reports that during the week ended August 14, 538 cases of cholera were reported, with 270 deaths.——Despite preventive measures, cholera has entered Odessa. On September 18, 20 cases were reported, with 7 deaths, and on September 19, 20 cases and 6 deaths.——The *St. Petersburg Medical Weekly* says in its issue of September 5, that between July 8 and August 15, 3,141 cases, with 1,595 deaths, occurred in Russia, the majority in Astrakhan, Nijni Novgorod, where the great annual fair is now in progress, having 142 cases.——On account of the rapid spread of cholera in Russia, Surgeon-General Wyman of the Public Health and Marine-Hospital Service is said to have sent to that country an officer, a cholera expert, who will be expected to make a study of the situation and advise the surgeon general, and also take such steps as may be deemed desirable to prevent the spread of the disease to the United States.——United States consuls at Libau, Hamburg, Bremen, Rotterdam, Antwerp, London, Liverpool, Southampton and Glasgow have been instructed to detain all Russian immigrants en route to the United States for five days when circumstances render it advisable.——The report of the municipal hospitals of St. Petersburg for September 22 shows 417 new cases and 117

deaths. There is now a total of 1,587 patients in the various hospitals. The incompleteness of the municipal statistics is shown by the fact that in one cemetery alone there were 424 interments during the last three days or within 20 of the total number of deaths reported.——France is extending precautions and has established an emergency station in addition to the elaborate disinfectant plants at the terminals of the Northern and Eastern railroads.

Public Health Reports for September 18 announce that at Hankow more than 200 deaths have occurred among the native population, and that 8 cases have occurred among foreigners, with 7 deaths.——At Hongkong 4 cases occurred during the week ended August 1, with 3 deaths.——The reports from Shanghai, dated August 17, say that Asiatic cholera now prevails to some extent among the natives along the water front.——The disease is reported at Amoy and Hankow, the latter furnishing about 6 victims a day, the total mortality reaching 1,860, among the fatal cases being a number of foreigners.——The disease is said to be prevalent at Su Chow, Wo Sech, Hang Chow, Ning Po, Nan Kin and other native cities.——Under date of August 22 and 24, cholera is reported at Kure, the naval station in the inland sea near Heroshima, Japan, where a vessel from Calcutta is in quarantine with 4 cases on board.

Telegraphic advice from Manila, September 21, reports that on the previous day two white persons were attacked by cholera. During the day 35 new cases were reported in the city. For the twenty-four hours ended at 8 a. m., September 21, 58 new cases of cholera and 19 deaths were reported in Manila.——Governor-General Smith has called a special meeting of the Philippine Commission to lay plans for the extension of the campaign against the disease.——Chief Quarantine Officer Heiser, Manila, reports under dates of July 27 and August 3, that during the week ended July 25, two cases of cholera were reported, with one death, and during the week ended August 1, 14 cases, with 11 deaths.——During the week ended July 18, 1,445 cases were reported from the infected provinces of Benguet, Bulacan, Capiz, Ilocos, Sur, Iloilo, Misamis, Nueva, Ecija Pampanga, Pangasinan, Tarlac, and Union, with 778 deaths. During the next week 1,048 cases were reported, with 637 deaths, and during the following week 1,004 cases, with 695 deaths.——For the twenty-four hours ended at 8 a. m., September 23, 36 new cases of cholera were reported, with 11 deaths, the smallest gain made by the disease for several days. No additional cases in Americans are reported and those now ill have good prospects for recovery.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Sept. 12, 1908.

The Health of the Army.

The report of Lieutenant-General Sir Alfred Keogh, director general of the Army Medical Department, shows that the health of the troops, at home and abroad, has been exceptionally good last year. The diminution in illness has been most marked in India and in Egypt. In the former country the hospital admission and death rate were the lowest on record. An enormous diminution in venereal disease is recorded. In 1897 the hospital admission rate was 507.8 per 1,000; in 1907 it had fallen to 89.9. As regards invaliding in India, during the past cold season the experiment was tried of sending men to the hills stations instead of invaliding them home, as was formerly the custom. The result has been most gratifying; the men improved markedly in these places, which possess an unrivalled climate in the winter. As a consequence, compared with the previous season, the number of invalids has decreased one-half. The improvement in the general health of the army is attributed to increased attention to sanitation. Prophylactic measures have been more generally adopted and sanitary details in barracks and camps more carefully attended to. The discovery that Malta fever is conveyed by the milk of goats has led almost to the extermination of the disease. A comparison with the latest figures of disease in other armies shows that in respect to all diseases the army of the United States heads the list, with an admission rate of 1,179 per 1,000, and this is followed by the armies of Austria, France and Germany in the order named, while the British army occupies the lowest place but one.

Tuberculozyne.

An inquest held at Southend on a boy, aged 11, the son of an Italian ice-cream vendor, shows once more the nostrum vendor as a greedy harpy, preying on the sick. A year ago the father took the boy to 6 Bouverie Street, London, the address of the exploiters of Tuberculozyne, which was advertised as follows: "Tuberculozyne, by its peculiar action, destroys the bacilli. Its properties are such as to resist the disease germs. Do not delay too long. Tuberculozyne, if taken in time, will cure you of consumption." The father expected to see a doctor, but only saw some of the office help, and the boy was not examined. For twelve months, up to the time of his death, he took the nostrum. The necropsy showed an old pleurisy and tuberculosis of both lungs and of the intestines. The police took possession of two bottles of Tuberculozyne in the patient's house. Dr. Bernard Dyer, the public analyst, examined them and found that they consisted for the greater part of a solution of glycerin, flavored with cinnamon in one case and some kind of almond flavoring in the other. According to the directions, they were to be taken mixed. One contained some potash compound and some compound of phosphates or phosphoric acid and was slightly alkaline. The other was slightly acid and contained minute traces of copper (about one-fiftieth of a grain to the ounce). Medical evidence was given to the effect that the mixture would have no effect either to benefit or to injure the patient. The coroner, in reviewing the case, severely criticized the vendors. "When the father got into communication with them," he said, "they swamped him with 'literature' to induce him to undertake the treatment. He took the boy to London, expecting to see a doctor and saw only women clerks. He received two bottles of a useless mixture, for which he was charged $10 and for which he could ill afford to pay. My only object in holding this inquiry is that the public may have some information in regard to highly advertised quack medicines." In one of their letters to the father the vendors stated that "the cost of Tuberculozyne is very low, considering the nature of the ingredients and the expense of making it widely known." Exhibiting a large newspaper advertisement of the nostrum, the coroner observed that it was evident that "making it widely known" must cost a considerable sum of money. In reply to a question from a juror whether it would not be possible to prosecute the vendors, the coroner said that that was not a question for the jury, but for the police.

Plague in the Punjab.

The report on the sanitary administration of the Punjab for 1907, which has just been issued, is of unusual interest. It deals with a year in which the mortality is without parallel in this or any other province of India. The deaths from plague reached the appalling figure of 608,685, or 30.3 per 1,000, almost equal to the aggregate death rate from all other causes in the province and more than double the rate from all causes in England. The highest death rate from plague previously reported was 19.7 per 1,000 in 1904. Plague first broke out in the Punjab in the severe epidemic form in 1902, since which time the population has been almost decimated by it; the deaths in the six years which have elapsed amount to 1,808,415, or about 9 per cent. of the population. Fortunately the epidemic of the present year is of a very mild character. The mortality has been far higher in the rural districts than in the towns. The most striking fact in the epidemiology of plague is its apparent dependence on climatic variations, its disappearance when the temperature becomes very high and its reappearance when the temperature falls. How does the bacillus maintain its existence during the non-epidemic season? Its life in the soil has been found to be comparatively short, and plague in man is dependent on plague in rats. There is no reason to suppose that man harbors the bacillus after recovery, and although chronic plague does occur among rats, the development of acute plague from a chronically infected rat is thought hardly possible. The only obvious way in which plague can be maintained in the non-epidemic season is by a chain of acute cases among rats. In the cities of Calcutta and Bombay, and in different areas in the widely infected provinces, plague occurs in man throughout the year. It follows that acute plague in rats must occur throughout the non-epidemic season. As the mildness of the epidemic of 1905-06 did not indicate an approaching cessation it can not be argued that the great decline of the present year indicates any hope of cessation. The government are taking active measures of the usual kind, but the attitude of the people toward them remains hostile. They endure the epidemic with their usual fortitude, but will not avail themselves of inoculation or evacuate their dwellings.

The Study of Tropical Medicine in Liverpool.

For a considerable time the teachers of the Liverpool School of Tropical Medicine have reported to the committee that the

time allotted for the course of instruction—ten weeks—is insufficient, especially as recent numerous advances have much enlarged our knowledge of tropical medicine. The school has determined, therefore, to add three weeks to the period of study. Owing to this lengthened term it will not be possible to give more than two courses in the year. These will begin on January 6 and September 15. Another innovation has been introduced—a course lasting one month, of practical instruction in tropical pathology and medical entomology. This will be given in June. It is hoped that it will be of great use to physicians returning on short leave to England, as it will enable them to acquire the technic of microscopic and laboratory work which has been much desired by many.

Irish Vital Statistics.

The annual report of the registrar-general for Ireland shows that in 1907 the marriage rate was 5.14 per 1,000, a decrease of 0.02 as compared with the year 1906 but 0.05 above the average rate for the last ten years. The birth rate was 23.2, the same as the average for the last ten years. The death rate was 17.7, or 0.7 above the rate for the preceding year, but 0.2 under the average for the preceding ten years. The excess of births over deaths was 24,408, but the loss by emigration amounted to 39,082, which exceeded the average for the last ten years (37,381). As usual, Ireland maintains its reputation as a land of centenarians. No fewer than 700 persons died whose ages were stated to be over 95, and 145 were reported as over 100. In the absence of public records for remote periods verification of the ages of very old persons is not possible, but secondary inquiries were made and showed that the ages were correct as far as could be ascertained. The most ominous feature of the report is the death rate from tuberculosis, which shows no diminution and amounts to 15 per cent. of the deaths from all causes. Nearly all the deaths from this disease occurred between the ages of 25 and 35.

Fat Men Barred as Divers.

The recent investigations of Mr. Leonard Hill have shown that fat men are more liable to caisson disease than thin ones, because adipose tissue is very absorbent of the nitrogen of the air, the liberation of bubbles of which in the body produces the symptoms. The same conclusion, of course, applies to divers or others exposed to increased atmospheric pressure. The admiralty has, therefore, laid down the following rules for the royal navy: From candidates for seaman diver and artificer diver only those who have not a tendency to fat are to be accepted, preference being given to men who are distinctly thin. In the case of men who have already qualified for divers all those who may be classed as fat are on no account to be employed in diving. Men who are inclined to fatness, but not to such an extent as in the opinion of the medical officer to disqualify them for work at the lesser depths, may continue operations in depths not exceeding 12 fathoms (72 feet). In all diving operations at 20 fathoms (120 feet) and over men of the sparest habit are to be selected from the available divers.

PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, FRANCE, Sept. 2, 1908.

School Hygiene.

The application of the experimental method of psychology has profoundly modified our ideas on pedagogy. As this evolution from an abstract to an applied science advances, the important rôle that the physician is called on to play in the work becomes more and more apparent. The special knowledge of the physician enables him to solve, better than any one else, the difficult problems in the education of youth. This rôle of the physician has too long been underrated in France. Up to the present the medical inspection of schools has been very defective, and, indeed, it scarcely exists except in a few large cities.

About six years ago a private society, which is now known as the "French League for School Hygiene," was founded by the initiative of Dr. Albert Mathieu. At present it includes among its 1,300 members about 400 teachers and professors.

The purposes of the league are: 1, to call attention to the disadvantages for growing children of the present organization of the schools; 2, to secure for children the judiciously planned physical exercise and open-air life which are so important for the welfare of the young; 3, to reform educational programs and methods so as to avoid mental overwork and waste of intellectual energy, and, 4, to demand for physicians and for fathers of families a more effective share in the regulation of the physical and intellectual life of pupils. The league has local branches which work to secure from the public authorities and from the heads of private schools the necessary improvements in school hygiene.

Being a society for propaganda as well as for study and for action, the league has twice organized national congresses of school hygiene at Paris, and is now preparing for an international congress,[1] the third of its kind, to be held in Paris in the spring of 1910.

For two years the league has been holding at Paris a series of medical-pedagogic conferences which have been very well attended. The subjects of some of the conferences which will be held next winter are as follows: The relations of medicine and pedagogy; classes for abnormal children; the prophylaxis of criminality by educational selection; sexual morality in school; instruction in sexual physiology at school; prophylaxis of venereal diseases at school; the maladies of growth, etc.

It is certainly under the influence of the propaganda carried on by the league that the minister of public instruction has decided to take measures looking to the care of the mouths of school children.

These measures comprise the organization of services of dental inspection and of dental treatment and instruction in regard to the care to be taken of the mouth. The service of inspection of the teeth is to be entrusted to a graduate of a dental school. The teeth of all pupils will be examined by this specialist twice a year, and the result of the examination will be recorded on a special memorandum, which will be preserved by the head of the school. The expense of the service of dental treatment will fall on the families, like the expenses of illness.

It will be easy, however, for the heads of schools situated in or near the large cities to secure for their pupils the services of the dentists in the clinics connected with the dental schools. Everywhere, moreover, lacking a dentist chosen by the parents, the service of dental treatment, organized outside the school, will be entrusted to a graduate of a dental school chosen, like the dental inspector, by the administration on recommendation of the head of the school, and to be paid in accordance with a scale previously fixed in each locality by agreement with the families. The dental inspector and the dental practitioner will never, however, be united in the same person, since the former is to keep check on the latter by means of a record in regard to the teeth treated and the work done, which the dental practitioner will fill out at each operation. This record will be returned to the school and compared by the dental inspector with his own records.

These measures will apply, not to primary schools alone, but also to the lycées, or grammar schools, and the high schools for boys and girls. At the Michelet School in Paris the two services of dental inspection and of dental treatment will begin with the opening term.

At the same school a fumigating apparatus for the disinfection of books has just been installed, in which all the books belonging to pupils who have had infectious diseases will be submitted to the fumes of formaldehyd. During the summer vacation all books lent to pupils during the course of the school year will be disinfected.

BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, Aug. 29, 1908.

The Koch Antituberculosis Fund.

Until comparatively recently, wealthy people in Germany have not been inclined to make large endowments for philanthropic and especially for scientific purposes. It is only since the national wealth of the Germans has been increasing in the last few decades that the example of philanthropists in America, Russia, England and other countries has acted as a stimulus to our wealthy countrymen, but, of late, foundations for the promotion of the general welfare are increasing from year to year in the most gratifying way. It is true that we can not show such large endowments as have been made now and then in your country, as we do not have the multimillionaires who are found in your enviable country in not inconsiderable number. Perhaps, however, the number of endowments made yearly may, to a certain extent, compensate for the amounts of the single gifts; in the course of the last decade alone, several millions have been devoted to general beneficence.

In many cases the possibility of obtaining distinctions from the government in the shape of titles and orders or even the

1. Previously referred to in THE JOURNAL, Aug. 15, 1908, p. 612.

elevation to the nobility may act as a powerful stimulus to the endowment of charity, and in this respect our emperor has without doubt done a very encouraging work. But, aside from these motives, there is the influence of the humanitarian trend which has seized the entire world, and especially the German people, leading men of means to devote a portion of their wealth to the general good without reference to earthly reward.

Last year a new foundation was established which, on account of its purpose and of the man to whom it is dedicated, should enlist the special interest of the entire medical profession. This is the Robert Koch Endowment Fund for the Fight against Tuberculosis—*Die Robert Koch-Stiftung zur Bekämpfung der Tuberkulose*

The first suggestion for this foundation came from Prof. Schwalbe, the editor of the *Deutsche medizinische Wochenschrift*, who took advantage of the occasion of the twenty-fifth anniversary of the discovery of the tubercle bacillus, March 24, 1908, to issue an appeal for the collection of this Koch endowment fund. The editor of this well-known medical journal had an especial justification for his action in the fact, which may be well known to you, that with few exceptions Robert Koch has published his entire work in the *Deutsche medizinische Wochenschrift*, so that his journal is to a certain extent Robert Koch's "organ."

The plan received immediately the cordial support of the highest authorities and of the profession, and in less than a year it proved possible to realize the goal set by the committee. To date the subscriptions to the fund have already exceeded a million marks ($240,000). To be sure, your great philanthropic countryman, Andrew Carnegie, contributed nearly half of the sum in response to an appeal from the first court physician on the occasion of a visit of Carnegie to the emperor at Kiel. The emperor has given the next highest contribution, 100,000 marks ($24,000); the remainder has come from manufacturers and physicians, not only in Germany, but in many other countries, and other classes of the population have participated in the endowment.

The object of the foundation is the encouragement of scientific investigations to aid the campaign against tuberculosis. The board of directors of the foundation consists of 11 members: 1, Robert Koch himself; 2, a member named by the emperor; 3, the president of the imperial health office; 4, the director of the institute for infectious diseases; 5, a representative of the German central committee for the campaign against tuberculosis; 6, a representative of the imperial committee for medical postgraduate instruction; 7, a representative of the *Aerztevereinsbund*, a national German medical association, and four members selected by the board of directors. As honorary members such persons can be appointed as have been especially instrumental in promoting the purposes of the institution. (As I hear, it is proposed to elect Carnegie an honorary member.) The management has at its disposal for the purposes of the foundation the interest on the endowment fund and special donations.

Possibly the foundation may receive attention in America at the International Congress on Tuberculosis, which will certainly gain an especial attraction by the presence of Robert Koch. The most satisfactory recognition will, of course, be by gifts of money.

Pharmacology

Tuberculozyne.

Our London correspondent refers[1] to a coroner's inquest recently held in England on a boy who died while taking the nostrum Tuberculozyne. This cruel fake is a product of this country—for which we should blush—being put on the market by "Dr." Derk P. Yonkerman of Kalamazoo, Mich. It was exposed by Dr. Kebler in THE JOURNAL[2] about two years ago. Later Samuel Hopkins Adams in *Collier's*[3] paid his respects to it and its exploiter, and last year the *Sydney* (N. S. W.) *Bulletin*[4] had the following to say regarding the nostrum:

> "The blastiferous 'Tuberculozyne' seems to be a mixture of many things and whether a patient strikes one bottle or the other there appears every reason to consider that he is a swindled consumptive. Possibly the hash is harmless—the *Bulletin* does not know—but a harmless mixture may amount to the cold-blooded murder of a consumptive just as much as a keg of prussic acid. A patient who is capable of being cured under proper treatment may waste his time over the bottles of rubbish manufactured by shameless and grasping quacks till he becomes incurable, and in that case the quack has killed him just as much as if he beheaded him with an axe. In this case the bottled slush was manufactured by a Yankee person or company and imported here in drums (carboys)."

An analysis of the nostrum and its method of exploitation was published in the *British Medical Journal*[5] recently. This analysis compared with those published in THE JOURNAL two years ago, those made in Sydney, N. S. W., and others made by the public analyst for the coroner in the case described, show that like most remedies of that ilk—from antikamnia to peruna—one is never sure how long the "formula" will remain stationary.

It is to be hoped that more coroners on both sides of the Atlantic will force inquiries in cases of death occurring in patients who are taking these "sure cures." The awakening on the part of the British public to the worthlessness and danger of nostrums of the type of Tuberculozyne will indirectly help to abolish the Great American Fraud. It has become increasingly common since the American public has been aroused to the viciousness of "patent medicines" for the promoters of such to seek new victims in other English-speaking nations. Object lessons such as coroners' inquests will inevitably tend to eliminate those human scavengers who wring money from the incurably sick under the guise of "cure."

1. London Letter, this issue, p. 1093.
2. Nov. 10, 1906, p. 1549.
3. The Great American Fraud, 4th Ed., p. 73.
4. Report of the Royal Commission, Australia, I, 1907.
5. Aug. 22, 1905, 505.

Correspondence

Marital Tuberculosis Infection.

TOPEKA, KAN., Sept. 9, 1908.

To the Editor:—In your editorial on "Marital Infection in Tuberculosis," in THE JOURNAL, September 5, you say: "At present it would seem to be fairly well established . . . that consumption is not actively contagious between husband and wife, and that a certain previous constitutional condition or predisposition is essential for its contagion to act in any case."

The experience and observation of a fairly long professional life fully confirm your conclusions. I know the nostrum vendors prove what they will by experience, by noting only what confirms. While I have never known an instance in which husband and wife contracted tuberculosis from this closest of human relationships, I have known many instances in which they did not, and give you one of exceptionally marked character.

Z. V., a pioneer in the Miami Valley, Ohio, who early fell a victim to the drink habit, married a healthy and vigorous woman; to them were born three sons and three daughters. Two of the sons contracted the drink habit, and two of the daughters died of pulmonary tuberculosis. The other daughter was married to a strong and healthy farmer of good heredity. Soon after the birth of their eleventh child the father died of congestive remittent fever. The youngest daughter died at the age of 19, of consumption. All the other children married healthy husbands and wives. The husband of the oldest daughter died early of fever, and after a number of years the widow married again, and died of consumption, leaving a healthy husband to die of old age. Her three sisters, dying of consumption, left healthy husbands, two of them marrying a second time and dying practically of old age, the other dying of fever at Burlington, Iowa. Of the sons, two escaped tuberculosis, two died of that disease, and two of alcoholism, contracted in the early fifties, when alcohol was supposed to cure consumption, and so it often did, by virtue of one dread destroyer outrunning another. The sons all left healthy widows, and the mother nursed all her children during their last illnesses, and died of old age.

If tuberculosis is contagious, the contagion is of a widely different character from that of variola, rubeola, and allied diseases. As it is one of the great destroyers of mankind, though rarely developing in a vigorous life, the problem with the profession would seem to be how to secure and sustain such a life, and so prevent the development of the starving tuberculous cell. W. L. SCHENCK, A.M., M.D.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

PRESCRIPTION WRITING.

———, Sept. 17, 1908.

To the Editor:—Will you kindly give the correct use of the word "ad" in prescription writing? If, after indicating the amount of basis, adjuvant, etc., the name of vehicle is followed by "ad" with the number of ounces indicated, shall the whole amount of prescription be brought to this amount or shall this amount of the vehicle be added? Does the use of q. s. preceding or following the word "ad" change its significance? There seems to be some confusion in regard to the matter; some claiming that "ad" is synonymous with add. G. L. N.

ANSWER.—The use of "*ad*," in the connection above given, means that the immediately preceding ingredient is to be added until the entire bulk of the mixture is brought up to the amount specified. "*Ad*" is simply Latin for "to" or "up to," and has nothing to do (save in a remote philological connection with which we are not here concerned) with the English word "add." The addition of the letters "*q. s.*" (*quantum sufficiat*) would effect no change in the sense, for their significance is there, whether written or not; but it would alter the grammatical construction of the entire phrase by requiring the name of the ingredient to which *quantum sufficiat* refers, to be put in the genitive case of quantity (as is done with the other ingredients) instead of in the accusative as the direct object of the verb "take." In Latin we say "*Recipe acidi hydrochlorici diluti drachmam unam*," where in ordinary English we should invert the order and say "take one dram of hydrochloric acid." What do we take? One dram. One dram of what? Of hydrochloric acid. In the last instance, however, the idea is different. "*Recipe aquam ad uncias sex.*" What do we take? Water. How much water? (Enough to make) up to six ounces. If, however, we give expression to the "enough to make," by "*q. s.*," then "*q. s.*" corresponds, as the direct object of *recipe*, to the specified amounts of the other ingredients and requires a genitive of the thing measured to qualify it. Hence we should have: *Recipe aquæ, quantum sufficiat ad uncias sex.*

The above points are, of course, elementary, both in Latin and in prescription writing. It is only consistent, however, to answer the question rather fully, in view of the criticism that has been made so often, both by THE JOURNAL and by many members of the medical profession, that there is a marked lack of thoroughness in the teaching of prescription writing in medical colleges.

LITERATURE ON CYSTITIS.

ECKERTY, IND., Sept. 12, 1908.

To the Editor:—Please give references to articles on cystitis that have appeared in THE JOURNAL. J. E. SAALMAN.

ANSWER.—The following original articles and abstracts have appeared in THE JOURNAL:

Prather, S. S.: Cystitis, *Am. Pract. and News*, May, 1905; abstracted in THE JOURNAL, May 27, 1905, p. 1716.

Gersuny, R.: Improved Catheter to Prevent Cystitis, *Zentralbl. für Gynäkol.*, xxx, No. 1; abstracted in THE JOURNAL, March 17, 1906, p. 840.

Norris, C. C.: Two Rare Forms of Cystitis, *American Medicine*, March 31, 1906; abstracted in THE JOURNAL, April 14, 1906, p. 1139.

Sellei, J.: Treatment of Cystitis with Alcohol, *Berlin. klin. Wchnschr.*, lxiii, No. 45; abstracted in THE JOURNAL, Jan. 19, 1907, p. 270.

Hunner, G. L.: The Tub Treatment of Cystitis, THE JOURNAL Dec. 21, 1907, p. 2066.

Pedersen, V. C.: Treatment and Prognosis of Suppurative Cystitis, reported in Society Proceedings, THE JOURNAL, Feb. 22, 1908, p. 639.

Reference may be made to the Department of Therapeutics in THE JOURNAL, Aug. 5, 1905, p. 420, and Sept. 8, 1906, p. 804.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 19, 1908:

Kilbourne, E. D., capt., relieved from duty at Fort Brady, Mich., to take effect at such time as will enable him to comply with order, and will proceed to San Francisco, and take transport sailing for Manila, Nov. 5, 1908, and on arrival to report to the commanding general for assignment to duty.

Bailey, Edward, M. R. C., ordered to active duty in the service of the United States, and is assigned to duty at Fort George Wright, Washington.

Jones, G. B., M. R. C., relieved from duty at Fort George Wright, Wash., and ordered to Fort Benjamin Harrison, Ind.

Dade, W. H., M. R. C., granted leave of absence for two months and fifteen days.

Bruns, E. H., first lieut., relieved from further duty at Fort Monroe, Va., and ordered to proceed to Fort Bayard, N. M., and report in person to the commanding officer of the General Hospital for duty.

Winter, F. A., maj., and Baily, H. H., capt., appointed members of a board of officers to meet at the Army Dispensary, Washington, Sept. 22, 1908, and on such other dates as may be necessary for the purpose of conducting the physical examinations prescribed in G. O. 79, War Dept., May 14, 1908, of such field officers as may be ordered before it.

Ford, J. H., and Duncan, L. C., capts., appointed members of a board of medical officers to meet at Ft. Wm. H. Harrison, Mont., for the examination of such officers of the Medical Reserve Corps, as may be brought before it to determine their fitness for retention in service.

Halliday, F. A., first lieut., retired from active service, Sept. 13, 1908.

Quinton, W. W., capt., granted 30 days' sick leave.

Peed, G. P., capt., relieved from duty at Fort Ontario, N. Y., and ordered to Fort Monroe, Va., for duty.

Culler, R. M., capt., relieved from duty at Ft. Monroe, Va., and ordered to Fort Ontario, N. Y., for duty, instead of Ft. Logan H. Roots, Ark., as heretofore ordered.

Schmitter, Ferdinand, first lieut., ordered to Ft. Logan H. Roots, Ark., for duty.

Halliday, C. H., M. R. C., relieved from duty at Ft. Sam Houston, Tex., and ordered to Fort Fremont, S. C., for duty.

Cutliffe, W. O., M. R. C., ordered to Ft. McIntosh, Tex., for duty.

Guittard, A. M., cont. surg., ordered to proceed to his home, Alliance, Ohio, and on arrival to report to the Surg. Gen. for annulment of contract.

Lynch, Charles, major.; Delaney, M. A., and Siler, J. F., capts., detailed to act as judges at the third annual contest of the First Aid Corps of the Penn. Coal Co., and the Hillside Coal & Iron Co., to be held on Saturday, Oct. 3, 1908, at Inkerman, near Scranton, Pa.

Woodbury, F. T., capt., leave of absence extended 15 days.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Sept. 19, 1908:

Old, E. H. H., asst.-surgeon, ordered to duty at the Naval Hospital, Norfolk, Va., September 15.

Dollard, H. L., asst.-surgeon, detached from the *Rhode Island* and ordered to the *Albatross*.

Hart, G. G., acting asst.-surgeon, detached from the *Albatross* and ordered home to wait orders.

Marsteller, E. H., surg., transferred to the retired list from Sept. 15, 1908, on his own application after completion of 30 years' service, in accordance with a provision of the naval appropriation act of May 13, 1908; detached from the Naval Recruiting Station, Baltimore, Sept. 15, and ordered home.

Wells, H., medical director, detached from the Naval Recruiting Station, New York, and ordered to the Navy Yard, Portsmouth, N. H., and to additional duty in command of the Naval Hospital at that yard.

Bogert, E. S., surgeon, detached from the Naval War College, Newport, R. I., and ordered to the Naval Recruiting Station, New York.

Hoen, W. S., P. A. surgeon, detached from duty as assistant to the Inspector in charge of the Third Lighthouse district, Tompkinsville, N. Y., and ordered to the Naval Hospital, New York, for treatment.

May, H. A., P. A. surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to duty with lighthouse vesels en route to the Pacific Coast.

Reed, E. U., asst.-surg., detached from the Navy Yard, Mare Island, Cal., and ordered to the Naval Training Station, San Francisco.

Murphy, J. A., surgeon, ordered to temporary duty on board the *Franklin*.

McCormick, A. M. D., surgeon, detached from the Naval Academy, and ordered to the Naval Recruiting Station, Baltimore.

Bishop, L. W., P. A. surgeon, ordered to duty at the Naval Hospital, New York.

Foster, T. G., asst.-surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to the Naval Hospital, Newport, R. I.

MacKenzie, E. G., and Sterne, C. F., asst.-surgeons, detached from the Naval Hospital, New York, and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.

Phelps, J. R., asst.-surgeon, detached from the Naval Hospital, Boston, and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.

Henry, R. B., and Giltner, H. A., asst.-surgeons, appointed assistant surgeons from Sept. 10, 1908.

McMurdo, H. B., acting asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to course of instruction at the Naval Medical School, Washington, D. C.

Whitside, L. C., acting asst.-surgeon, detached from duty at the Naval Hospital, Newport, R. I., and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.

Book Notices

URIC ACID AS A FACTOR IN THE CAUSATION OF DISEASE. By Alexander Haig, M.A., M.D., Oxon, F.R.C.P. Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women. Seventh Edition. Pp. 940 with 75 illustrations. Price, $4.00. Philadelphia: P. Blakiston's Son & Co., 1908.

Probably no book has exercised a wider influence or produced a deeper impression on the minds of English-speaking physicians than Haig's work on "Uric Acid in the Causation of Disease." It is safe to say that a good share of the present generation of physicians have formed their conceptions of disease and have conducted its treatment under the influence of the ideas set forth in the former editions of this book. Its influence has extended even to the laity, so that it is not uncommon for the intelligent patient to assist the physician to a diagnosis by suggesting that it may be uric acid in his blood.

Two problems are presented by the book: 1, What is the secret of its immense influence, and 2, why does it continue to exercise this influence in spite of the fact that the theories of Haig have been largely repudiated by the scientific world? The first query finds its answer largely in the style and character of the book and largely also in the nature of its theme. It is an attractive idea to build up a theory that shall simplify the causation and likewise the treatment of disease by referring all forms to one cause. Osteopathy, Christian science, and other fads owe much of their popularity to the fact that they attempt thus to simplify the problem of the causation of disease. An inspection of the index of Haig's book will show how thoroughly he has attempted to bring the various forms of disease under the dominion of uric acid. The ingenuity with which his theory is fitted to the exigencies of the different ailments of mankind is indeed remarkable. The book appears to have immense practical as well as scientific value. If the theory is true, the numerous practical suggestions scattered through its pages make it a mine of therapeutic wealth. The so-called facts of experiment and experience with which its pages are filled would render it an epoch-making contribution to science. The author has collated observations and recorded experiments on the relations of uric acid with as great diligence as Darwin collected and classified the facts of biology before announcing his theory of evolution. It is small wonder then that medical men seeking for uniformity and general principles amid the puzzling facts and theories of pathology and therapeutics should have welcomed a book that promised to lead them to the desired goal along so clear a path. Further, we must credit the author with a fascinating and pleasing style. So much may be said in explanation of the immense vogue which the book attained when first published.

But the second question is more difficult to answer. It is probably known to most physicians who have followed the advance of investigation that the ideas and theories of Haig have been long discredited and disproved. Why, then, do they still maintain their hold on a large proportion of our profession? The analytic methods of Haig were early shown to be unreliable, the central proposition on which he relies, viz., that there is a normal fixed ratio between urea and uric acid, was disproved as much as ten years ago, and yet he still propounds it with confidence and evidently expects that the profession will accept his conclusions.

Haig, having begun with the assumption that uric acid had some relation to headache, was soon puzzled by the fact that "while there might be a bad headache one day, with say, an excretion of 16 grains in the twenty-four hours, an exactly similar excretion might occur on another day without any headache." Nothing daunted, he sought for an explanation, which he found in an assumed abnormal relation of uric acid to urea on the day on which the headache occurred. The supposed fixed relation of uric acid to urea (a theory long since exploded) is the first false premise on which the imposing structure of Haig's uric acid theory is based.

The character of facts relied on to support his assumptions is shown on page 16, where he estimates the amount of uric acid stored in the body from the amount found in various organs, arriving at the conclusions that the body contains about 300 grains. He then estimates with great exactitude the amount excreted for 3,161 days. Such imposing figures indicate a patience in scientific research that is commendable, but the results must be put down as mere guesswork. The guesswork character of these figures becomes more apparent when we consider that the method used by Haig is not an exact one. On page 18 we meet another theory propounded by Garrod and accepted by Haig, which is discarded by modern physiologists, viz., the theory that uric acid is formed in the kidney. Then for several pages of suppositions he explains how the uric acid on the headache day could not all have been formed in the kidney, since the proportion to urea would not allow of so much, but it must have come from some point at which it had been retained in the body.

The next false statement in this remarkable collection of errors is that acidity controls excretion of uric acid (p. 20). The view that alkalies increase uric acid excretion is again advocated on page 38. This statement, if made two decades ago, would have been pardonable, but with the advance of investigation it has been shown to be erroneous and ought not to appear in a book published at the present day.

On page 43 we meet the careless statement that glycocoll is a constituent of uric acid, and again on page 45 he says that the removal of glycocoll from the body is equivalent to the removal of uric acid. We learn (p. 47) that the effects of belladonna and opium are due to their action on uric acid secretion. On page 51 occurs the astounding statement that alkaloids increase uric acid in proportion to their xanthin elements. The presence of xanthin in alkaloids will be a surprise to most chemists, and the amount of uric acid produced from a grain of strychnin would not be very noticeable considering that the alkaloid is not by any means all decomposed in the body. Another remarkable statement occurs on page 21 and is formulated as a law, that "urinary water varies hourly and daily inversely with the excretion of uric acid or with the height of uric acid above urea." From this the author expands his theory until we find that uric acid controls the secretions, the blood pressure, the action of the capillaries, and the metabolism of the whole body.

The relation of uric acid to disease is a much discussed problem. With the prevailing uncertainty as to the normal metabolism the more careful investigators have been unable to find any evidence of its pathogenic action except in gout. Haig is troubled by no such scruples. He divides diseased conditions into two groups, apparently including the entire nosology and enumerates over a hundred affections which owe their origin, not solely, but principally, to this one substance. The two groups he sums up as gout and collemia. If one does not find a disease under one head he is pretty sure to hit it under the other. "Gout is relieved by solvents; collemia by retentives. Both are prevented, relieved or cured by a uric-acid-free diet. Gout is accompanied by quick circulation, raised temperature and few granules in the blood. Collemia is accompanied by slow circulation, subnormal temperature and many granules in the blood. This epitomizes the subject." Surely this simplifies pathology beyond the desire of the most indolent student.

It would be easy to fill many pages with demonstrations of the errors and inconsistencies of the book. Enough has been said, however, to show that while it may have once received attention as presenting plausible theories, the basis on which these theories are built is erroneous and superstructure worthless. This being the case, the question as to the continued popularity of the work is still more difficult of answer. We may attribute part of its popularity to the conservatism of physicians who hesitate to abandon old views and fail to keep abreast of scientific progress. It is to be hoped that the better education in chemistry of the coming generation of doctors will make impossible the acceptance of such untenable theories. How far the activity of proprietary interests has been efficient in keeping alive the theories of Haig is a question of interest, and if such influence has been considerable,

as we believe it has, its lesson ought to put the medical man on his guard as to the source from which he derives his science as well as that of his remedies.

THE PATHOLOGY OF THE EYE. By J. Herbert Parsons, B.S., D.Sc. (Lond.), F.R.C.S. (Eng.), Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital. Vol. IV, General Pathology. Part II. Cloth. Illustrated. Price, $3.50. New York: G. P. Putnam's Sons, 1908.

This is the latest of the series of works on the pathology of the eye by Mr. Parsons. On the whole it is even a better example of original work, patient compilation and practical application of laboratory study than his previous contributions to the same subject. Seven chapters treat of "Injuries of the Eye," "Exophthalmos and Enophthalmos," "Panophthalmitis, Orbital Cellulitis and Thrombosis," "Sympathetic Ophthalmia," "Symptomatic Diseases of the Eye" and "Heredity."

One of the most satisfactory chapters is that on "Migratory Ophthalmia." After a careful analysis of all the theories of its pathogenesis, Parsons is of the opinion that bacterial transmission by metastasis, first mentioned by Mackenzie and elaborated by Berlin, is worthy of acceptance. He believes that most of the facts point to sympathetic ophthalmia as a disease of bacterial origin, and "if the virulence of the organisms and the varying conditions of resistance of the tissues are taken into account the variations in latent period and many other difficulties are abolished." Parsons thinks that the organism is pathogenic only for the eye and is innocuous to other parts of the body. He points out that in leprosy and tubercle their characteristic organisms set up a metastatic inflammation that, though subacute or chronic, is yet not purulent. Even virulent organisms may circulate in the blood and be harmless until they reach an organ or tissue for which they are pathogenic. For example, saprophytes, reaching the eye by way of the blood current, may set up serious ocular inflammation, although they do not affect other organs of the body through which the same infected blood flows. Parsons restates this idea of blood transmission when he says that the "fact that sympathetic ophthalmia manifests itself as a uveitis both in the exciting and sympathizing eye points to the same *causa causans*. The organism multiplies in the exciting eye; if this is removed early infection does not occur, but if organisms have escaped in quantity into the circulation sympathetic ophthalmia may follow."

That rather odd lesion "hole" in the macular retina, first described by Knapp in 1869, may be due to disease as well as to trauma. In almost all instances it is preceded by edema of the macular region, as de Schweinitz and others have pointed out. In all probability this edematous condition is followed by atrophy and slow perforation and is not necessarily due to injury, though a contusion of the globe or any injury to the orbital region may precipitate the final result.

Parsons refers to the appearance of lipemia in some cases of diabetes mellitus. The ophthalmoscopic appearances are very striking, as the retinal vessels contain a fluid which looks like milk—a condition which Uhthoff believes to be due to the arrangement of fat globules next the vascular wall, the red corpuscles remaining in midstream.

Parsons thinks that the main difference between diabetic and albuminuric retinitis lies in the absence of ophthalmoscopic changes in the arterial walls and of the absence of papillitis in diabetes—alterations so commonly observed in renal retinitis.

HEALTH AND HAPPINESS. By Robert Maxwell Harbin, A.B., M.D. Cloth. Pp. 184. Price, $1.20. Philadelphia: Griffith & Rowland Press, 1908.

This book partakes of the character of a sermon to scientists in general and physicians in particular. Its platform may be best stated in the following words from Dr. Harbin's argumentum: "It is endeavored to produce an argument for the identities of the physical, intellectual and spiritual natures, respectively, and their relations to the Infinite Material Universe and Infinite Moral Universe. Health relates to the former, while happiness belongs to the latter realm. Science has to do with the material, while religion concerns the moral sphere. Infraction of the laws of Nature brings disease, while violation of the moral law brings unhappiness. While health has some bearing on happiness, there is no necessary causative relation between the two, for there may be happiness without health and *vice versa*, and it is not within the purpose of this discussion to refer to that phase of the subject." The argument unfolds Dr. Harbin's position, as outlined above, fairly well, but its convincingness will depend on the mental attitude of the reader. Those, however, who are interested in the study of these problems, from whatever viewpoint, may derive pleasure from it; at least it contains nothing likely to offend anyone, unless it be the blank materialist. The Argument is followed by chapters on "The Influence of Nature in Disease as Revealed by Recent Investigations," "Physiology of the Soul," "The Analogy of Disease and Sin," and "The Philosophy of Death." The style is somewhat jerky and syncopated, and in places is lacking in lucidity from inattention to the requirements of grammatical connection. Moreover, some of the scientific statements are deficient in accuracy, as when the author says that "the physiologist . . . can not distinguish a red blood corpuscle of an animal from that of the human organism."

CATARACT EXTRACTION. A Series of Papers with Discussion and Comments Read Before the Ophthalmological Section of the New York Academy of Medicine, 1907-1908. Edited by J. Herbert Claiborne, M.D., Instructor in Ophthalmology Cornell University Medical College. Cloth. Pp. 169. Price, $2.00. New York: William Wood & Co., 1908.

This work is a valuable symposium on cataract, although the title is "Cataract Extraction." The individual papers have been contributed by men chosen for their peculiar fitness to treat the particular subject assigned to them and the whole has been most ably edited by Dr. Claiborne, who has added many valuable data from his own personal experience. Briefly, the subjects considered are: stage of development of cataract most suitable for extraction; preparation of patient and instruments; combined extraction; extraction with keratome; after-treatment; technic and indications for discission of secondary cataract; extraction in capsule; maturation operations; extraction of high myopia; final results of cataract extraction. These papers have been compiled with full discussions and may be said to cover the subject of cataract in full to date. One notable point is that in all the papers and discussions Herman Knapp of New York is the only one who mentions irrigation of the anterior chamber after cataract extraction.

MEDICAL GREEK. By Achilles Rose. Cloth. Pp. 262. Price, $1.00. New York: Peri Hellados Publication Office.

This book is a republication of a series of papers advocating accuracy according to the genius of the Greek language in the formation of medical terms from the Greek. To attain this end Rose insists that we can not ignore the work in nomenclature by modern Greek physicians, among whom are to be found, he says, excellent philologists, versed in both the ancient and the modern Greek. The book contains chapters, among other things, on "Greek as the International Language of Physicians and Scholars in General," "Greek in Medicine," "A Conspiracy to Suppress the Truth About Living Greek," "Memorial on the Anatomic Nomenclature of the Anatomic Society," by Dr. Hermann Triepel; "Scientific Medical Nomenclature," by Dr. Herbert Kruger, and a "Guide to the Learning of Modern Greek" for those who know classical Greek, also by Dr. Kruger.

DIETS IN TUBERCULOSIS. By Noel Dean Bardswell, M.D., M.R.C.P., F.R.S. (Edin.) Medical Superintendent, King Edward VII Sanatorium, and John Ellis Chapman, M.R.C.S., L.R.C.P., Medical Superintendent, Coppin's Green Sanatorium. Cloth. Pp. 184. Price, $2.50. New York: Oxford University Press, 1908.

Under a grant from the Royal Society, Bardswell and Chapman were engaged in research work for a period of seven years, and from time to time made reports to the society. This work is an abstract of these communications and represents the final report of their investigations. The conditions of these investigations were most favorable, because each worker was the medical superintendent of a large sanatorium. From their own experiences and from the results obtained by coworkers in Europe and America they deduce general princi-

ples of diets for consumptives and are able to state the comparative value of various foodstuffs. Their practical conclusions should be of value to superintendents of sanatoria, especially to those who are compelled to strive for economic efficiency in diets.

DISEASES OF THE RECTUM AND ANUS, Including the Fifth Edition of the Jacksonian Prize Essay on Cancer. By Harrison Cripps, F.R.C.S., Senior Surgeon, St. Bartholomew's Hospital. Third Edition. Cloth. Pp. 588. Price, $4.20 net. London, J. & A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1907.

Mr. Cripps' well-known work on the rectum comes to us in a new edition, revised, and enlarged by the addition of matter of much value. The commoner diseases of the rectum are treated in thoroughly modern fashion. The section devoted to cancer of the rectum is particularly thorough and contains an extensive table of cases. Full reports of illustrative cases are characteristic of the book. We note the omission of any reference to colopexy in the chapter on prolapse of the rectum, our author recommending only cauterization or excision as methods of treatment for that ailment. With this exception the book is a valuable accession to the literature of this specialty.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

GEORGIA Homeopathic Board of Medical Examiners, 153 Whitehall street, Atlanta, October 1. Secretary, Dr. R. E. Hinman, 153 Whitehall street, Atlanta.

LOUISIANA State Board of Medical Examiners, New Orleans, October 1-2. Secretary, Dr. Felix A. Larue, 211 Camp street, New Orleans.

RHODE ISLAND State Board of Health, State House, Providence, October 1-2. Secretary, Dr. Gardner T. Swarts, 315 State House, Providence.

ARIZONA Board of Medical Examiners, Phoenix, October 5-6, Secretary, Dr. Ancil Martin, Phoenix.

UTAH State Board of Medical Examiners, Salt Lake City, October 5-6. Secretary, Dr. R. W. Fisher, Salt Lake City.

IDAHO State Board of Medical Examiners, Boise, October 6. Secretary, Dr. W. F. Howard, Pocatello.

MONTANA State Board of Medical Examiners, Senate Chamber, the Capitol, Helena, October 6. Secretary, Dr. W. C. Riddell, Helena.

COLORADO State Board of Medical Examiners, State Capitol, Denver, October 6. Secretary, Dr. S. D. VanMeter, 1723 Tremont Place, Denver.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 6-8. Secretary, Dr. H. M. Wheeler, Grand Forks.

MINNESOTA State Board of Medical Examiners, the Old Capitol, St. Paul, October 6-9. Secretary, Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

NEW MEXICO Board of Health and Medical Examiners, Santa Fe, October 12-13. Secretary, Dr. J. A. Massie, Santa Fe.

ARKANSAS Regular Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. F. T. Murphy, Brinkley.

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. P. C. Williams, Texarkana.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, October 13. Secretary, Dr. E. R. Anthony, Griffin.

MISSISSIPPI State Board of Health, The Capitol, Jackson, October 13. Secretary, Dr. S. H. McLean, Jackson.

KANSAS State Board of Medical Registration and Examination, Topeka, October 13-15. Secretary, Dr. R. A. Light, Chanute.

MICHIGAN State Board of Registration in Medicine, Lansing, October 13-15. Secretary, Dr. B. D. Harison, 504 Washington Arcade, Detroit.

WYOMING Board of Medical Examiners, October 14-16, Secretary, Dr. S. B. Miller, Laramie.

NEW JERSEY State Board of Medical Examiners, State House, Trenton, October 20-21. Secretary, Dr. J. W. Bennett, Long Branch.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 21-23, Secretary, Dr. J. A. Egan, Springfield.

INDIANA Board of Medical Registration and Examination, Room 120, State House, Indianapolis, October 27. Secretary, Dr. W. T. Gott, Room 120, State House, Indianapolis.

Michigan May and June Reports.

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examinations held at Detroit and Battle Creek, May 25-27, and at Ann Arbor, June 9-11, 1908. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and 50 per cent. on each subject.

At the examination held May 25-27, the total number of candidates examined was 38, of whom 36 passed and 2 failed. One candidate took an incomplete examination. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
American Med. Miss. Coll.	(1904)	96.1; (1907) 84, 89.9
College of P. and S., Chicago	(1908)	85.7
University of Maryland	(1903)	77.2
Detroit Homeo. Coll.	(1908)	82.9, 84.4, 85.5
Grand Rapids Med. Coll.	(1907)	77.4
Detroit Coll. of Med.	(1901)	75.3; (1907) 76.6; (1908) 79.6, 79.8, 80.9, 81.9, 81.9, 83.4, 84, 84.2, 84.5, 84.5, 84.7, 84.8, 85.1, 85.2, 85.3, 85.8, 86.3, 87.1, 87.7, 87.7, 88.7, 89.4, 89.6, 89.6.
Jefferson Med. Coll.	(1874)	91.7
FAILED.		
Detroit Coll. of Med.	(1908)	71, *78.6

At the examination held June 9-11 the total number of candidates examined was 68, all of whom passed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
American Med. Miss. Coll.	(1901)	92.9; (1905) 90.5; (1908) 85.2, 87.1, 90.
Detroit Coll. of Med.	(1907)	79.8
University of Michigan	(1902)	88.8; (1908) 82.9, 83.5, 83.6, 83.7, 83.8, 83.9, 84.4, 84.5, 85.5, 85.6, 85.7, 85.9, 86, 86, 86.1, 86.2, 86.5, 86.6, 86.7, 86.9, 87, 87.1, 87.1, 87.2, 87.3, 87.5, 88, 88.2, 88.2, 88.2, 88.3, 88.3, 88.8, 88.9, 89, 89.2, 89.2, 89.3, 89.4, 89.5, 89.6, 89.7, 89.8, 90.1, 90.3, 90.5, 90.8, 91.6, 92, 92.7, 93.1, 93.1.
University of Michigan, Homeo. Dept.	(1889)	95.2; (1908) 83.4, 86, 87.5, 89.4, 90.1.
American Med. Coll., St. Louis	(1903)	80.7
Dartmouth Med. School	(1908)	76.7
Jefferson Med. Coll.	(1902)	89.8

* Conditioned in histology and embryology. Required four more marks to make 50 per cent.

Illinois June Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, June 24-27, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 360, of whom 326 passed and 34 failed. Two candidates took an incomplete examination. The following colleges were represented:

PASSED. College.	Year Grad.	Total No. Examined.
University of Southern California	(1908)	1
American Med. Miss. Coll.	(1901) (1906)	2
Bennett Coll. of Ecl. Med. and Surg.	(1908)	16
Chicago Coll. of Med. and Surg.	(1908)	44
College of P. & S., Chicago	(1908)	80
College of Med. and Surg., Chicago	(1908)	1
Dearborn Med. Coll.	(1907)	1
Hahnemann Med. Coll., Chicago	(1908)	21
Hering Med. Coll.	(1907) (8, 1908)	9
Illinois Med. Coll.	(1908)	7
Jenner Med. Coll.	(1908)	17
National Med. Univ., Chicago	(1907)	1
Northwestern Univ. Med. School	(1907) (90, 1908)	91
Rush Med. Coll.	(1903) (1906) (1907) (21, 1908)	24
College of P. and S., Baltimore	(1896)	1
Creighton Med. Coll.	(1908)	1
Long Island Coll. Hosp.	(1907)	1
University and Bellevue Hosp Med. Coll.	(1899)	1
Eclectic Med. Inst., Cincinnati	(1908)	1
Ohio Med. University	(1896)	1
Pulte Med. Coll.	(1901)	1
Western Univ. of Pennsylvania	(1908)	1
Jefferson Med. Coll.	(1908)	2
Medico-Chirurgical College, Philadelphia	(1905)	1
FAILED.		
Bennett Coll. of Ecl. Med. and Surg.	(1908)	2
Chicago Coll. of Med. and Surg.	(1908)	1
College of P. and S., Chicago	(1908)	9
Hahnemann Med. Coll., Chicago	(1891) (6, 1908)	7
Illinois Med. Coll.	(1908)	4
Jenner Med. Coll.	(1907) (7, 1908)	8
Northwestern Univ. Med. School	(1908)	1
Med. Coll. of Indiana	(1903)	1
Barnes Med. Coll.	(1908)	1

South Carolina June Report.

Dr. H. H. Wyman, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, June 9-11, 1908. The number of subjects examined in was 16; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 68, of whom 47 passed and 21 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Howard University	(1906) 82.2; (1907)	80.3
Atlanta College of P. and S.	(1908)	78.3
Atlanta School of Med.	(1908)	83.6
University of Georgia	(1903) 77.6; (1908)	81.1, 85.1
University of Louisville	(1907)	85
College of P. and S., Baltimore	(1907)	78.6
University of Maryland	(1907) 75.6, 80.8; (1908)	78.3, 80.7, 88.3
Baltimore Med. Coll.	(1907) 75; (1908)	86.5
Maryland Med. Coll.	(1904) 81; (1907)	85.2
Leonard School of Med.	(1908)	78.2, 79.8, 83.1
Woman's Med. Coll. of Pennsylvania	(1908)	84.6
Medical Coll. of South Carolina (1907) 78.8, 87.6, 95.3; (1908) 75.3, 78.3, 79.8, 80.7, 81.3, 81.7, 83.1, 84.5, 85.2, 87, 87.8, 89, 89.3, 89.6.		
University of Tennessee	(1908)	75.2, 82.6
Meharry Med. Coll.	(1908)	80.8
University of the South	(1904)	75.5
Tennessee Med. Coll.	(1907)	77.5
University of Nashville	(1907)	91.7
University of Virginia	(1901) 89.6; (1906)	75

FAILED.

College.		Per Cent.
Howard University	(1907)	66.5
Atlanta College of P. and S.	(1908)	64
University of Georgia	(1906) 68.8; (1908)	69.3, 69.7, 70.6, 73.7
Baltimore Med. Coll.	(1903)	63
Leonard School of Med.	(1906) 66.5; (1908)	54.3, 56.2, 67.7, 75.3
Med. Coll. of South Carolina (1901) 34; (1907) 65.7; (1908)		61.5
Meharry Med. Coll.	(1907) 49.6, 62.8; (1908)	48, 74.3
University of the South	(1907)*	

* Percentage not given.

Arkansas July Report.

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, July 14, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 51, of whom 36 passed, including 15 non-graduates, and 15 failed, including 11 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
College of P. and S., Little Rock	(1908)	77
Denver and Gross Coll. of Med.	(1907)	75
National Med. Univ., Chicago	(1908)	75
Tulane University of Louisiana	(1908)	81, 85
St. Louis University	(1907) 85; (1908)	87
Barnes Med. Coll.	(1908)	75
Geneva Med. Coll., New York	(1867)	83
Vanderbilt University	(1908) 86, 87,	88
University of the South	(1906)	83
University of Tennessee	(1908)	83
Meharry Med. Coll.	(1907) 75; (1908)	93
University of Nashville	(1906) 81; (1908)	77
Memphis Hosp. Med. Coll.	(1908)	77, 79
University of Wurzburg, Germany	(1903)	79

FAILED.

College.		Per Cent.
Memphis Hosp. Med. Coll.	(1908)	71
Meharry Med. Coll.	(1907) 73; (1908)	71, 72

LICENSED WITHOUT EXAMINATION.

There were also licensed at this examination five old practitioners, including one non-graduate, who were granted license by reason of having been registered under the old law. The following colleges were represented:

College.	Year Grad.
University of Maryland	(1877)
University of Nashville	(1878)
Gate City Medical College	(1906)
University College of Medicine, Richmond	(1895)

Colorado July Report.

Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the oral and written examination held at Denver, July 7-8 and 13-14, 1908. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. Fifty-nine applicants were licensed at this examination, 24 of whom passed the examination, and 35 were registered on presentation of satisfactory credentials, including state licenses. Two of the applicants appearing for examination failed to make the required percentage. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Denver Homeo. Med. Coll.	(1908)	75.8, 78.7, 78.8
University of Colorado (1908) 77.5, 78.4, 79.1, 79.8, 82.4, 82.4, 83, 85.4, 86.3.		
Denver and Gross Coll. of Med. (1908) 75.7, 76.2, 76.5, 77.3, 78.5, 78.7, 79.4, 79.8, 80.2, 81.2.		
Maryland Med. Coll.	(1904)	75.9
Cleveland Coll. of P. and S.	(1902)	76.2

LICENSED WITHOUT EXAMINATION.

College.	Year Grad.	State Licenses.
College of P. and S., San Francisco	(1902)	Nevada
Denver and Gross Coll. of Med.	(1907)	Nevada
Bennett Coll. of Ecl. Med. & Surg.	(1883)	Texas; (1902) Illinois
Chicago Homeo. Med. Coll.	(1893)	Iowa
College of P. and S., Chicago	(1902)	Illinois
Hahnemann Med. Coll., Chicago	(1881)	Mich.; (2, 1899) Iowa
Rush Med. Coll.	(1885)	Iowa
Northwestern Univ. Med. School	(1898)	Wis.; (1905) Illinois
Ft. Wayne Coll. of Med.	(1882)	Nebraska
College of P. and S., Keokuk	(1896)	Missouri; (1897) Iowa
Keokuk Med. Coll.	(1896)	W. Virginia
Kansas Med. Coll.	(1907)	Kansas
University of Louisville	(1892)	Illinois
College of P. and S., Baltimore	(1891)	W. Virginia
Baltimore Med. Coll.	(1905)	W. Virginia
Harvard Med. School	(1898)	Mass.
University of Michigan	(1908)	Michigan
St. Louis Coll. of P. and S.	(1890)	(1897) Missouri
Barnes Med. Coll.	(1908)	Illinois
University Med. Coll., Kansas City	(2, 1906)	Missouri
Marion Sims Coll. of Med.	(1899)	Missouri
Cornell Univ. Med. Coll.	(1907)	New York
College of P. and S., New York	(1904)	New York
Ohio Med. University	(1898)	Ohio
Med. Coll. of Ohio	(1896)	Ohio
University of Pennsylvania	(2, 1902)	Penna.
Milwaukee Med. Coll.	(1907)	Wisconsin

FAILED.

College.	Year Grad.	Per Cent.
Denver Homeo. Med. Coll.	(1908)	66.9
College of P. and S., Keokuk	(1901)	56.3

Connecticut July Report.

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, July 14-15, 1908. The number of subjects examined in was 12; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 47, of whom 37 passed and 10 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Georgetown University	(1908)	83
Yale University (1907) 79, 84.9; (1908) 78.8, 78.8, 79.5, 80.3, 82.9, 83.2, 83.5, 84, 84.4, 85.5, 85.5, 87.9, 88.2.		
Kentucky School of Med.	(1908)	80.4
Baltimore Med. Coll.	(1908)	75.4, 77
Maryland Med. Coll.	(1908)	79.5
Johns Hopkins Medical School	(1907) 83; (1908)	78
College of P. and S., Baltimore	(1907)	81.6
Harvard Med. School	(1905) 81.8, 84.9; (1906)	79.6
Tufts College Med. School	(1907) 77.1, 82.4; (1908)	84.7
College of P. and S., Boston	(1908)	79.6
Syracuse University	(1908)	80.9
College of P. and S., New York	(1895)	85.7
University and Bellevue Hosp. Med. Coll.	(1908)	81.1, 81.2
Jefferson Med. Coll.	(1908)	81.3, 84.2
McGill University, Quebec	(1906)	82.6

FAILED.

College.		Per Cent.
College of P. and S., Chicago	(1890)	67.2
Baltimore University	(1900)	67
Maryland Med. Coll.	(1908)	68
Baltimore Med. Coll.	(1906)	61.6
Johns Hopkins Medical School	(1908)	74.2
Harvard Medical School	(1904)	73.8
College of P. and S., New York	(1898)	67.9
Jefferson Med. Coll.	(1908)	73.1
Laval University, Quebec	(1892)	64.7
University of Naples, Italy	(1905)	59.5

New Hampshire July Report.

Mr. H. C. Morrison, regent for the New Hampshire Board of Medical Examiners, reports the written examination held at Concord, July 15-16, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 15, of whom 10 passed and 5 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Medical School of Maine	(1904)	86
Baltimore Med. Coll.	(1905)	77
Tufts Coll. Medical School	(1907) 82; (1908)	76
Boston University	(1906)	92
Dartmouth Medical School	(1907)	79, 79
Cleveland Coll. P. and S.	(1908)	81
Jefferson Med. Coll.	(1908)	76
University of Vermont	(1908)	80

FAILED.

College.		Per Cent.
Kentucky School of Med.	(1908)	59
Baltimore Med. Coll.	(1903)	71
University of Vermont	(1906) 67; (1908)	70
Laval University, Quebec	(1905)	65

LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
New York Homeo. Med. Coll.	(1907)	Vermont
University of Vermont	(1887) (1906)	Vermont
Dartmouth Medical School	(1900)*	

* This candidate was licensed by endorsement of his Dartmouth Medical School diploma, under the original medical act, allowing men who matriculated before 1897 and received a diploma between that date and 1903, to be licensed without examination.

Illinois July Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, July 22-24, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 63, of whom 46 passed and 15 failed. Two candidates took an incomplete examination. The following colleges were represented:

PASSED. College.	Year Grad.	Total No. Examined.
George Washington University	(1907)	1
Howard University	(1908)	1
Bennett Coll. of Ecl. Med. and Surg.	(1908)	1
Chicago Coll. of Med. and Surg.	(1908)	1
College of Med. and Surg., Chicago	(1907)	1
College of P. and S., Chicago	(1904) (4, 1908)	5
Hahnemann Med. Coll., Chicago	(1908)	1
Hering Med. Coll., Chicago	(1908)	1
Illinois Med. Coll.	(1908)	1
Jenner Med. Coll.	(1908)	4
National Med. University, Chicago	(1903)	1
Northwestern Univ. Med. School	(1908)	7
Rush Med. Coll.	(1908)	9
University of Louisville	(1908)	1
Hospital Coll. of Med., Louisville	(1897)	1
Barnes Med. Coll.	(1908)	3
Washington University, St. Louis	(1908)	1
St. Louis Coll. of P. and S.	(1908)	1
University of Oregon	(1907)	1
Jefferson Med. Coll.	(1900) (1908)	2
University of Pennsylvania	(1897) (1907)	2
FAILED.		
Bennett Coll. of Ecl. Med. and Surg.	(1908)	2
Hering Med. Coll., Chicago	(1908)	1
Jenner Med. Coll.	(1908)	1
Rush Med. Coll.	(1883)	1
Indiana Med. Coll.	(1907)	1
Keokuk Med. Coll.	(1891)	2
Barnes Med. Coll.	(1908)	2
Homeopathic Med. Coll. of Missouri	(1901)	1
Washington University, St. Louis	(1908)	1
St. Louis Coll. of P. and S.	(1908)	2
Royal University of Naples, Italy	(1882)	1

Marriages

CHARLES G. DAWLEY, M.D., to Miss Minnie Martin, both of Los Angeles, August 12.

GEORGE H. DAY, M.D., to Miss Tommie Hornsey, both of Louisville, September 10.

JOSEPH E. HALL, M.D., to Miss Stella Grizzle, both of Alexandria, Ind., September 2.

LEONARD W. SHOEMAKER, M.D., to Mrs. May Parkison, both of Tulia, Texas, August 30.

PERCIVAL J. MEYERS, M.D., to Miss Pauline Aronson, both of San Francisco, Cal., September 9.

A. L. MCELROY, M.D., Palestine, Texas, to Miss Jettie Plaxco of Decatur, Texas, September 16.

ROBERT RETZER, M.D., Baltimore, to Miss Nannie Deidania Ridgely, at Baltimore, September 10.

GEORGE CLINTON BAKER, M.D., Gassaway, W. Va., to Miss Katherine Wells, at Baltimore, September 8.

FRANK ROBERT SLOPANSKY, M.D., Helper, Utah, to Miss Cecil May Budge of Salt Lake City, September 5.

WALTER F. LOWERS, M.D., Baltimore, to Miss Clara J. Margaret Ellinghaus, at Baltimore, September 9.

CLARENCE D. BRADLEY, M.D., Ford City, Pa., to Miss Margaret G. Dallas of Philadelphia, September 10.

CHARLES WILLIAM RAINS, M.D., Knoxville, Tenn., to Miss Margaret Whedon of Lincoln, Neb., September 16.

W. TAYLOR CUMMINS, M.D., Philadelphia, to Miss Josephine Widdecombe of West Chester, Pa., September 9.

HORACE HOWARD JENKS, M.D., Philadelphia, to Miss Eloise Comstock North, at New London, N. H., September 11.

LUDWIG MANNHEIMER LOEB, M.D., Chicago, to Miss Minna Juliet Morgenthau at Far Rockaway, N. Y., September 14.

Deaths

Charles Harrington, M.D., educator, physician and sanitarian, who probably did more than any one man to protect the health of the people of Massachusetts, and who by his example and work stimulated other sanitarians to do similar work; died suddenly September 11, from heart disease at a hotel in Lynton, Devonshire, England, aged 52. He was born in Salem, Mass., in 1856; attended Bowdoin College in 1873 and 1874; was graduated from Harvard University in 1878; and from the Medical School of Harvard University in 1881. He then studied at the universities of Leipzig, Strassbourg and Munich for two years; and returned to Boston, where he became assistant in chemistry and later instructor and assistant professor in his alma mater, serving in these positions from 1883-1906, when he was made professor of hygiene. In 1890 he entered the service of the State Board of Health; for nine years was chemist of the board; then for five years in charge of the bureau of milk inspection, and then made secretary. He was a member of the staff of the *Boston Medical and Surgical Journal* for many years, and latterly was in special charge of its department of hygiene. His text-book on "Practical Hygiene" is a standard work and has gone through several editions. He was a member of the American Medical Association, and greatly interested in its propaganda for the public health, and this year accepted a position on the National Legislative Committee. At the Chicago session of the Association he delivered the oration on state medicine, entitled "States' Rights and the National Health," in which he gave the history of the agitation for the national control of public health, detailed the constitutional difficulties in its way, discussed quarantine legislation and the doctrine of states' rights, emphasized the need of a constitutional amendment empowering the general government to act in health matters, deplored the predominance of the commercial principle, and suggested as the remedy for present conditions the education of public sentiment. This masterly oration attracted attention from the medical profession, sanitarians and jurists both at home and abroad. In the death of Dr. Harrington the medical and sanitary world suffers a distinct loss, as he was popular as an instructor and lecturer, devoted as a laboratory student, and was an organizer and administrative officer of the highest grade.

Hermon Joseph Smith, M.D. Dartmouth Medical School, 1867; a member of the Massachusetts Medical Society; of Lowell, Mass.; surgeon in the Army for three years during the Civil War; a member of the board of United States pension examining surgeons, and of the Lowell school board; at one time city physician; and for ten years superintendent of the Lowell Corporation Hospital; died in that institution September 12, aged 71.

Solomon S. Landon, M.D. University Medical College, Kansas City, Mo., 1896; professor of anatomy in the College of Physicians and Surgeons, Kansas City, Kan.; local surgeon for the C., B. & Q. Railway; and founder of the Sheffield Hospital, Kansas City; died in a sanitarium in that city, September 10, from mental breakdown, aged 36.

Anna Maria Wilkin, M.D. University of Michigan, 1880; a member of the American Medical Association; formerly physician for the Massachusetts State Reformatory Prison for Women and the state almshouse; a member of the staff of the South Framingham Hospital; died at her home in South Framingham, September 12, from pernicious anemia, aged 52.

David French Dayton, M.D. University of Michigan, 1875; a member of the Colorado State Medical Society; United States pension examining surgeon; health officer of Trinidad, Colo.; physician of Las Animas County; and consulting surgeon to the Colorado & Southern Railroad; died at his home, September 8, from asthma, aged 58.

Joseph Beechley Clifford, M.D. Cleveland Homeopathic Medical College, 1893; a member of the McKeesport (Pa.) board of health; died about August 31 and his body was found near Brown's bridge, September 12, aged 44. He is believed to have committed suicide while despondent from nervous disease and insomnia.

Eben Seward Lawrence, M.D. Albany Medical College, 1881; coroner, 1884-1886; village president in 1894-5; physician to the Saratoga County almshouse and jail; village trustee and member of the school board; died at his home in Ballston Spa, N. Y., September 11, aged 53.

Zachara T. Houseman, M.D. Eclectic Medical Institute, Cincinnati, 1870; a member of the Ohio State Medical Association;

a veteran of the Civil War; for two years mayor of Bairdstown; died at his home in Fostoria, Ohio, from dropsy, September 12, aged 59.

James Henry Holly, for 52 years a physician and dentist of Warwick, N. Y.; at one time president of the board of education; and for three terms president of the Second District Dental Society; died at his home, March 5, from general paresis, aged 72.

James H. Carothers, M.D. Miami Medical College, Cincinnati, 1866; physician of Contra Costa County, Cal., for 30 years; a member of the legislature in 1869 and 1870; died at his home in Martinez, May 14, from cerebral hemorrhage, aged 84.

Ferdinand W. Rose, M.D. Cincinnati College of Medicine and Surgery, 1883; a member of the American Medical Association; died at his home in Jamestown, Ohio, September 3, from fatty degeneration of the heart, after an illness of three days, aged 55.

Charles M. Post, M.D. College of Physicians and Surgeons, Chicago, 1892; a member of the Washington State Medical Association; of Colfax; died at the home of his brother in Barron, Wis., September 7, from malaria, aged 44.

Emmett Porterfield, M D. Bellevue Hospital Medical College, 1883; a member of the Iowa State Medical Society; a member of the school board of Indianola, Iowa; died at his home, September 9, from angina pectoris, aged 50.

James Franklin Jones, M.D. University of Nebraska, Omaha, 1901; a member of the Arizona Medical Association; local surgeon for the Santa Fé, Prescott & Phoenix Railroad; died recently at his home in Wickenburg, aged 37.

William Penn Brooks (license, Neb.; years of practice, 1891); a practitioner of Johnson County, Neb., for more than 40 years; died at his home in Cook, August 14, from the effects of a carbuncle of the neck, aged 71.

Joseph Randolph Harmer, M.D. Howard University, Washington, D. C., 1873; contract surgeon United States Army for several years; died from paralysis at the home of his daughter in Opelika, Ala., April 15, aged 66.

Oatie Russell Hess, M.D. Kentucky School of Medicine, 1904; of Longacre, W. Va.; died in the Charleston (W. Va.) General Hospital, August 16, from drug habit, acquired during a previous illness, aged 32.

George William Curtis, M.D. University of Vermont, Burlington, 1884; a member of the Maine Medical Association; died at his home in Lisbon Falls, September 8, from cerebral hemorrhage, aged 48.

Elias F. Dodd (license, Washington County, Pa., 1881); for 55 years a practitioner of Washington County; township justice of the peace; died at his home near Van Buren, September 8, aged 84.

Charles D. Conaway, M.D. Eclectic Medical Institute, Cincinnati, 1887; a member of the Iowa State Medical Society; died at his home in Brooklyn, Iowa, September 12, from heart disease, aged 55.

William Henry Snyder, M.D. Long Island College Hospital, 1904; of Brooklyn; died in the Methodist Episcopal Hospital, Brooklyn, July 30, five days after an operation for appendicitis, aged 25.

Cyrus Hamilton Allen, M.D. University of Vermont, Burlington, 1857; surgeon in the Army during the Civil War; died at his home in Centerville, Cal., September 7, from senile debility, aged 75.

Squier R. Mather, M.D. University of California, San Francisco, 1889; a member of the Medical Society of the State of California; died at his home in San Francisco, September 8, aged 41.

Benjamin Greene, M.D. New York University, 1859; a member of the Rhode Island Medical Society; died suddenly at his home in Portsmouth, from heart disease, September 11, aged 76.

Nathan B. Hughes, M.D. New York University; a surgeon during the Civil War; died at his home in Guthrie, Okla., August 15, from uremia, after an illness of three weeks, aged 75.

Robert B. Shackelford, M.D. University of Virginia, Charlottesville, 1852; University of Pennsylvania, 1854; died at his home in Cismont, Va., September 5, from cerebral hemorrhage, aged 74.

Robert W. Fleming, M.D. Eclectic Medical Institute, Cincinnati, 1850 or 1851; died suddenly at his home in Alamo, Tenn., February 22, from cerebral hemorrhage, aged 80.

Charles E. Bailey, M.D. Western Reserve University, Cleveland, 1891; died at his home in Greensburg, Ohio, recently, from carcinoma of the stomach, aged 40.

Henry McGrew, M.D. Bellevue Hospital Medical College, 1878; died at his home in Pleasant Ridge, Ohio, from cerebral thrombosis, September 6, aged 62.

John W. Hedden, M.D. Cincinnati College of Medicine and Surgery, 1875; died suddenly at his home in Enid, Okla., March 13, from heart disease, aged 57.

Joseph Runtz Hooper, M.D. Cleveland Homeopathic College, 1877; died suddenly at his home in Elkton, Mich., August 29, from angina pectoris, aged 59.

Joseph J. Crowe, M.D. Rush Medical College, 1893; of Chicago; died at the home of his father, September 14, from pulmonary tuberculosis, aged 40.

Gus R. Burson, M.D. Starling Medical College, Columbus; died at his home in Mount Blanchard, Ohio, February 28, from cerebral hemorrhage, aged 65.

William Wallace Nevin, M.D. Jefferson Medical College, 1846; died at his home in Shippensburg, Pa., from senile debility, April 28, aged 84.

Charles Bunce, M.D. Rush Medical College, 1861; U. S. pension examining surgeon; died at his home in Hastings, Neb., July 11, aged 70.

Isaac P. Sinclair, M.D. Chicago Medical College, 1869; of Prairie Home, Neb.; died near Glenwood, Iowa, August 27, from anemia.

George T. Greenleaf, M.D. Chicago Homeopathic Medical College, 1881; formerly of Redlands, Cal.; died recently at Holtville, Cal.

Herman F. Malech, M.D. Jefferson Medical College, 1876; died suddenly at his home in San Francisco, September 7, aged 54.

Marshal Beadles (years of practice, Ky.); died at his home near Water Valley, Ky., February 10, from pneumonia, aged 67.

Edwin Ruthvin Cook, M.D. University of Pennsylvania, 1847; died at Hopkinsville, Ky., Nov. 2, 1907, aged 83.

Robert G. Griffith, a retired practitioner; died in Atlantic City, N. J., April 12, from arteriosclerosis, aged 73.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Registration in Canada.

The *Canada Lancet*, in an editorial in its July number, discusses the relation between university degrees and licenses to practice medicine issued by the council of the College of Physicians and Surgeons of Ontario. It points out that, at the time the licensing power was conferred on the council, the medical colleges of Ontario were proprietary schools conducted by individual physicians mainly for profit and secondarily for the purpose of giving young men a medical education. At present, however, the medical colleges of Ontario are all affiliated with the universities. The Toronto School of Medicine and the Trinity Medical College, formerly proprietary schools, have become extinct and their places have been taken by the Medical Faculty of the University of Toronto. The Medical College of Kingston has become the Medical Faculty of Queen's University; the Medical College of London has become the Medical Faculty of Western University, so that to-day medical education in Ontario is in the hands of the universities and not under the control of private individuals.

The *Canada Lancet* agrees with Mr. I. H. Cameron, who in speaking before a recent meeting of the alumni of the university, said: "The university should again take to itself the authority of having its degrees in medicine carry with them the privilege of practicing in Ontario and Quebec without requiring its students to go to the trouble and expense of passing several arduous and to them unnecessary examinations before the Ontario Medical Council. The universities of McGill and Laval now have this power, and it is an anomaly and absurdity to think that such a university as Toronto is impotent in this respect."

The *Canada Lancet* states that the Medical Council might still be allowed to act as a sort of sentinel to see that the standard is maintained. Evidently the interest in this question centers around its bearing on dominion registration; that is, an arrangement whereby a common standard could be fixed for the entire Dominion of Canada so that one license and one registration would be good for all of the Canadian provinces. That such a uniform system of registration would be an advantage is evident. The plan as proposed, however, involves a return to the now well-nigh obsolete plan of uniting the teaching body with the licensing body. If the right to teach medicine is confined solely to the state university, then there is no objection to such a plan since the licensing power still remains in the hands of the state, but if any of the teaching bodies are controlled or could be controlled by private individuals, then there is no justification for conferring the power to license on such teaching institutions.

At the recent meeting of the Ontario Medical Association Dr. Roddick, dean of McGill Medical University, made a strong plea for interprovincial registration. The *Lancet* predicts that ultimately such a system will prevail and that its adoption would be an advantage in every way.

While conditions in the dominion vary considerably from those in the United States, the problems involved are much the same, and the efforts of the medical profession in Canada to improve conditions will be watched with much interest.

The Attitude of the Public Toward Medical Legislation.

The *Charlotte Medical Journal* for August contains, under the above title, a well-considered editorial, evidently inspired by comments in a New Orleans paper on the Labbe bill, recently adopted by the Louisiana legislature. The editorial says:

The inability of the public to comprehend the meaning of efforts on the part of the medical profession to protect them from quackery and imposition, or the belief that every proposal to establish legislation to this end is inspired by no other motive, so far as the medical man is concerned, than the establishment of a monopoly for his own personal advantage and aggrandizement, makes itself apparent in this country no matter where the attempt is made to introduce proper measures by legislative enactment. And it makes very little difference what the measure is directed at or against so long as the doctors are known to be backing it, or even if it is realized that the smallest good could possibly accrue to their benefit, immediately the hue and cry is raised that the doctors are attempting to establish a monopoly and thus interfere with the rights of the people to employ whomsoever they desire or to use whatever means they may wish to treat their real or supposed ills.

After quoting from the New Orleans paper in question regarding the provisions of the Labbe bill limiting the treatment of diseases to properly qualified persons, the editorial continues:

The public mind does not grasp the idea that it could possibly need protection from itself. A man has a right to say whether or not he shall have a doctor, and what doctor he shall have. And he has the right to choose a quack if he be ignorant enough to believe in one, but the quack or the nostrum dealer has no right to impose fraud on the public simply because the public can be fooled. Ninety-nine times out of a hundred attempts to enact legislation along these lines is for the good of the people, for the confusion of the fake and not for the establishment of a medical monopoly.

The distinction here made is an important one and involves an essential principle of restrictive medical legislation. If the individual is foolish enough to entrust his life to an uneducated, untrained charlatan, there is no law to prevent him from doing so, so long as his act does not endanger the health of the community. Similarly, there is no law to prevent any citizen from eating adulterated or impure food if he wishes to do so. It is, however, an unquestioned function of the state to protect its citizens from imposture or fraud, either in medical attendance or in foodstuffs. The object of pure food laws is to prevent dishonest dealers from selling to the consumer an impure product, when the consumer thinks he is securing a pure article. This means that what was formerly sold as "genuine strawberry jam" must now be so labeled as to show that it is composed of glucose and hayseed, with anilin dyes and a very little strawberry. The object of medical practice acts is to prevent the faker and the impostor from imposing his services on the individual patient, who ignorantly believes that he is being attended by a competent physician. The ultimate objects in both cases are the enforcement of honesty in business and the protection of the individual from imposition.

The argument regarding "medical monopoly" is constantly made. Restrictive legislation is of little value unless it confers certain privileges on those who comply with its requirements. The question at issue is the ultimate purpose of the law and not the incidental provisions necessary for its enforcement. The United States government will not allow any one to act as captain, pilot or engineer on any registered vessel unless he bears a license from the Treasury Department. No one has ever accused the United States of endeavoring to establish a monopoly in masters or pilots. The object of the law requiring certain qualifications for a government license is the protection of human life. The restriction of the exercise of these occupations to licensed persons is a necessary but incidental feature of the law.

What is most sorely needed for the proper understanding of medical legislation on the part both of the profession and of the public is a clearer idea as to the purpose of such legislation, and a better understanding of the principles underlying it.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Second Month.

SECOND WEEKLY MEETING.

IMMUNITY.

Definition.—Natural and acquired, inherited (animal species, or family or individual), active and passive, antibacterial and antitoxic, phagocytic (intracellular). Non-susceptibility. Historical: Theories of cause of immunity (a) exhaustion theory, (b) noxious retention theory, (c) phagocytosis. Bacteriolytic power of serum, discovery of toxins and antitoxins. Define alexins, cell receptors, hemolysins, cytotoxins, agglutinins, precipitins, of normal serum.

Side-chain Theory of Ehrlich.—Side-chain theory of nutrition; its application to process of immunity.

Toxins and Antitoxins.—Properties of toxins; secondary toxins, toxons, toxoids, prototoxoids, endotoxins. Ehrlich's side-chain theory; action center or nucleus (benzol nucleus), cell receptors, haptophore, excess of side-chains thrown off forming antitoxins, receptors of first order. Antigens and antibodies. Preparation and standardization of toxins and antitoxins. "Negative phase" and "positive phase of inoculation with antigens.

Agglutinins and Agglutination.—Normal and immune agglutinins, agglutinogens, agglutinoids, coagglutinoids, organisms producing agglutinins, variations in quantity, distribution in body, specificity of agglutination, "group agglutination." Technic of test, microscopic and macroscopic reactions. Agglutinins, receptors of second order with haptophorous and zymotic groups.

Precipitins.—Bacterioprecipitins, phytoprecipitins, zoöprecipitins. Precipitinogen, precipitin and precipitate. Formation of precipitin, receptor of second order with haptophorous and ferment-like groups. Forensic use of precipitins.

Bactericidal Serums.—Alexins, bacteriolysins, phenomenon of Pfeiffer, inactivation and reactivation, specificity of bactericidal serums, effect on endotoxins, standardization of serums. Amboceptors and complements. Amboceptor, thermostabile body with two haptophore groups, cytophile

and complementophile. Complement has haptophore and toxophore groups, effect of dilute salt solutions. Antiamboceptors and anticomplements. Specificity. Receptors of third group.

Opsonins. Phagocytosis.—Leucocytes, intra-leucocytic cytase and fixators, effect of serum on leucocytes, change of toxin by leucocytes. Opsonins in serum render bacteria more easily taken up by leucocytes. Sensitized bacteria. Opsonins destroyed by heat, deteriorate quickly, have haptophorous and opsoniferous groups. Normal and immune opsonins, bacteriopsonins and hemopsonins. Method of producing opsonins. Value in different infections. Technic of Wright's opsonic index.

Cytotoxins.—Definition, structure, theoretic value, immunization with tissue cells. Spermotoxin, leucotoxin, nephrotoxin, antinephrotoxin, hepatotoxins, neurotoxin, syncytiotoxin, thyrotoxin, pancretotoxin.

Varieties of Immunization: 1. Against living microbes. 2. Against microbic poisons.

Methods of Immunization.

I. Active Immunization. 1. Prophylactic Remedies: a. Immunization by attenuated living virus, Jennerian vaccination. b. By infectious agents killed by heat, etc., Haffkine's cholera and plague vaccines. Wright's typhoid vaccine. c. With bacterial products, Koch's old tuberculin. 2. Curative Remedies: Koch's old and new tuberculins, T. O. and T. R., Wright's pneumococcus and staphylococcus vaccines.

II. Passive Immunization (Serum of Animals Actively Immunized). Prophylactic and Curative Remedies: a. Specific antitoxic sera, diphtheria, tetanus, dysentery, etc. b. Specific bactericidal sera, typhoid, cholera, dysentery (Shiga). c. Bactericidal action assumed, not proved, antistreptococcus, antipneumococcus and antiplague sera.

III. Combined Active and Passive Immunization. Serum and vaccine, plague, etc.

Medicolegal

Character of Railroad Employés' Hospital Association and Liability of It and Railroad Company—Letting Insane Patient Leave Unattended.

The Supreme Court of Missouri, Division No. 1, says in the case of Phillips vs. St. Louis & San Francisco Railroad Company, of the Employés' Hospital Association of the Frisco Line, that it had but few, if any, of the earmarks of a voluntary benevolent association. Nor were there any earmarks of a public charity. What was received was paid for by the recipients. Under the weight of authority it could not be held to be a charitable institution. So that the rule that exempts such institutions from liability did not apply. Nor are institutions of the character of the one disclosed by this record exempted from liability by the mere employment of competent servants. They must go further and competently treat the patients received. In such case they occupy the position of ordinary physicians and surgeons and are bound by the same rules. If they undertake to furnish the treatment, not as a charity, they stand in no different light from the ordinary physician.

Furthermore, the court says that no one could read the record in the case without concluding that, if the thin corporate shell of the hospital association was broken, the yolk therein contained was the defendant railroad company. The hospital system was a worthy one, and a well-taken advance step; but, under the record in this case, such hospital association was but the agent of the defendant railroad company.

In this case an employé of the railroad company, who had been treated at one of the association's hospitals, took passage on one of the defendant's trains for St. Louis, his home. This train arrived about 7 o'clock that evening, and he left the train unharmed. About 9 o'clock of the same evening a man partially undressed and in condition to retire for the night, was lying across one of the many street car lines of the city, and was run over and killed by a passing car. It was this man.

The chief surgeon of the association, who was also the chief surgeon of the railroad company, wrote, two days after the man's death but before it was known, in effect notifying the auditor's department at St. Louis, where the man had been employed, that the man was insane and should be sent to a proper asylum, that he was not entitled to further treatment in the hospital under the rules thereof, and that no further certificates to the hospital should be given him. The court holds that this letter was admissible in evidence against the railroad company as in the nature of an official report from one of the chief officials of the defendant to another of such officials, and a report which was contemplated by the rules, which stood in the nature of an admission by an agent, whilst acting in the line of duty, and as such was an admission of the defendant. The letter, the court says, was at least admissible to show that the defendant's chief surgeon and agent had knowledge of the fact that the man was unbalanced in mind when he permitted him to be placed on the train unattended.

It was correctly contended, the court says, that the defendant railroad company was liable only for such injuries as could have been reasonably expected to have been foreseen; that is to say, if it was granted that the defendant was negligent, yet it was only liable for such injuries as would reasonably be expected to follow from such negligence, and not for mere remote contingencies. But apply that rule to this case. In the view just expressed, the defendant railroad company, by and through its agent, had assumed the duty of treating this man. The evidence tended to show that the patient was insane, and that the defendant had knowledge of that fact. Now, if the patient was insane, and the defendant had knowledge of that fact, then might it not have reasonably presumed that accident might befall a man in that condition? The freaks of a wandering mind are varied, it is true; but none knew them better than the skilled chief surgeon, who represented the defendant, when he had the man conveyed to the train. The court is not saying that the act of placing his practically undressed body across a street railway track was the result of his insane condition; but there were sufficient circumstances to authorize the submission of the question, under properly guarded instructions, to a jury for its decision. It could not be said that such an act was not one that could not have been reasonably anticipated by the defendant's surgeon when he placed an insane man aboard of a train, unattended, and without notice to his family, knowing that he would have to find his home in a populous city, filled with a network of street railway lines.

Admissible Evidence in Alleged Malpractice Case.

The Supreme Court of Vermont says that the first question in issue in the malpractice case of Willard vs. Noreross, where it affirms a judgment for the plaintiff, was whether the plaintiff had suffered an impacted "Colles' fracture" or a severe sprain, and another question followed it, namely, whether or not the defendant treated the case with the skill required of a physician and surgeon. The plaintiff claimed, and her evidence tended to show, that the injury consisted of a fracture of the radius, and that, if it were only a sprain, the defendant treated it unskilfully. On the other hand, the defendant claimed, and his evidence tended to show, that the injury was a sprain only; that his treatment of the case was skilful; that it was skilful if the injury were a fracture.

The plaintiff's counsel inquired of her whether, after the defendant made the first examination of her wrists the night after she was injured, she was able to move her hand or any of her fingers, and she answered, "No." That question was objected to on the ground that it ingeniously connected the defendant and his first visit with the plaintiff's pitiable condition that night, as if to lay the blame to him when he was not responsible for her condition. But as bearing on the character and extent of the injury, it was competent to show the condition of her hand and fingers the night after the accident.

The accident occurred in December. In the following May the plaintiff met the defendant and showed him her wrists,

and asked him what she should do, to which he replied: "Come up to my barn and milk my cows, and do my chores, and you will be all right." The plaintiff said to him that her wrists pained her so that she was almost insane, to which he replied: "Good, good enough." Counsel made a question whether this interview between the parties was had while the relation of physician and patient continued between them. The plaintiff's question, asking advice, and the defendant's answer, giving it, indicated that they both understood that the relation still existed. The answer seems frivolous, yet the defendant may have meant that the plaintiff should exercise her wrists, which was consistent with his theory that they were only sprained. All his conduct in relation to his treatment of the case was a proper subject of inquiry as bearing on the question whether he diagnosed and treated it skilfully. The admission of this evidence could not be held reversible error.

Again, the plaintiff's evidence tended to show that on the defendant's first examination he was asked whether the liniment would be a good application, and that he answered: "Yes; use horse liniment, or any old thing"; that the defendant set no bones, prescribed no medicine, bandages, nor application of any kind except said liniment. Another physician was called by the plaintiff as an expert witness, and duly qualified as such. He was asked whether he considered the prescribing of horse liniment good surgery in case of Colles' fracture, and he answered, subject to the defendant's exceptions, that it was not good surgery. One objection to the question was that in answering it the witness must assume the province of the jury. It was true that the rule by which the defendant's treatment of the case was to be tested was that of ordinary skill, such skill as physicians and surgeons in the same general neighborhood, in the same general line of practice, ordinarily had and exercised in like cases. On this question physicians and surgeons of practice and experience are experts, and their opinions are admissible in evidence on the questions that are strictly and legitimately embraced in their profession and practice. Whether the defendant's treatment was good surgery or proper treatment, whatever the nature of the injury, was a question on which the witness was competent to testify.

As the plaintiff's condition and complaints of pain tended to show the severity of her injury, the court holds that a witness might testify to what occurred after the accident and before the defendant saw the plaintiff, and that she complained of pain in her wrists. Moreover, the defendant being charged with malpractice and the plaintiff claiming that by reason of unskilful treatment her wrists still caused her suffering, it was competent for her to show their condition at any time before or during the trial.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

September 10.

1 *The X-Ray and Fractures. F. L. Cotton, Boston.
2 *Use of Tuberculin as a Diagnostic Agent in Pulmonary Tuberculosis. H. L. Barnes, Wallum Lake, R. I.
3 Growth and Development of Surgery in Smaller Cities. C. H. Richardson, Pittsfield, Mass.
4 *Omentopexy to the Intestine Deprived of Its Mesentery. C. L. Scudder, Boston.
5 Primary Carcinoma of the Appendix, with a Statement of the Literature. C. O. Kepler, Boston.

1. **X-Ray and Fractures.**—Cotton says that the addition to our fund of knowledge is probably the most important service of the *x*-ray. We have learned what to expect and what to look for, and in so doing we have learned how to look. Many types of fracture formerly supposed to be rare have proved common, and other lesions once commonly diagnosed, are now hardly heard of. There is, moreover, a whole series of joint fractures about which we formerly knew nothing. Another benefit conferred by the *x*-ray, used as it should be used, merely as one means of examination, is a great increase in diagnostic power. We have learned new signs, have come to associate certain displacements, limitations of motion, points of localized tenderness, etc., with the lesions to which they are appropriate, and thus by means of the *x*-ray have greatly bettered our capacity to do without the *x*-ray. Cotton discusses its use in routine fractures, and stigmatizes as the sheerest nonsense, much that has been written as to its being criminal neglect to treat a fracture without the *x*-ray. There are a few classes of cases—fracture of metatarsals by direct crushing, fractures of scapula, some injuries about the shoulder joint, crushing injuries of the hand and wrist, fractures of the pelvis, a few hip fractures, some injuries to ankle and tarsus—that often do depend on the *x*-ray for diagnosis; but in all these cases, simple retentive apparatus until an *x*-ray can be obtained is adequate treatment for the first few days. With obscure and complicated luxations the problem is different, but the cases in which an accurate diagnosis is essential to reduction of gross displacements are fortunately limited to a few luxations, with or without fracture, in the tarsus and foot. In regard to routine fractures, Cotton maintains that in a great majority of cases a properly trained surgeon can make his diagnosis, so far as practical details go, about as well without as with the *x*-ray. If he has not the skill so to make the diagnosis he is unlikely to be greatly helped by the *x*-ray. Cotton does not decry early taking of *x*-ray pictures if convenient, but merely emphasizes his belief that they are not a necessary routine. The importance of *x*-rays after reduction as a method of review, for the purpose of correcting error, is emphasized. The author contends that the time for the *x*-ray is after, not before, reduction, for the following reasons: (a) Immediate *x*-ray pictures are hard to get, even in hospitals; any considerable delay in reduction means poorer reductions as a rule. (b) *X*-ray examination does not take the place of the time-honored examination under anesthesia, and this examination, properly done, with immediate replacement of fragments, usually fulfills the immediate indications. (c) Considerations of difficulty in transportation, expense, and procrastination, make it unlikely that more than one *x*-ray picture will be taken in a given routine case. This one may best be taken when it will check both diagnosis and corrected position, and will help in prognosis. As to late *x*-ray pictures, taken to inform ourselves as to the end result, he believes that in the usual run of fractures we should use the *x*-ray in practically all cases, at least for record, repeating the examination if we may, but certainly using it at such periods as will enable us to establish or confirm the diagnosis and to check our treatment. It should not be used in place of skilled manipulation, or as the arbiter of end results. He discusses the operative surgery of fractures.

2. **Tuberculin Diagnosis of Pulmonary Tuberculosis.**—Barnes discusses the tuberculin diagnosis of pulmonary tuberculosis as used at the Rhode Island State Sanatorium and records cases. He reports on the replies with reference to the use of tuberculin and its results as received from 225 hospitals in answer to a circular letter. He concludes, among other things, that the tuberculin test is at present necessary for prompt diagnosis in many suspected cases of pulmonary tuberculosis, in the great majority of which the subcutaneous test will give a direct diagnosis, and if given judiciously in small initial doses is safe; but in Addison's disease it should be used with extreme caution or not at all. The tuberculin test should be used only in patients who have symptoms or signs of tuberculosis, for a positive reaction has no clinical value in others, because of the uncertainty as to the location of the lesions and a probability of healed lesions reacting. He analyzes the use of tuberculin in the 225 hospitals and the demonstration of its use to students in 81 medical colleges. The accuracy of the ocular and cutaneous tuberculin test is yet to be proved, and cases reacting negatively should be tested by the subcutaneous method unless contraindicated. All cases suitable for subcutaneous testing should receive it in preference to the ocular test, because of its greater safety. Finally, all medical students should be thoroughly trained in the use of the three methods of applying the tuberculin test.

4. **Omentopexy.**—Scudder has undertaken experiments on four dogs simply to note the behavior of the bowel after it has been shorn of its mesentery and the omentum has been used to take the place of the mesenteric blood supply. These experiments demonstrate that, in the dog, if the vessels in the mesentery are tied far from the mesenteric attachment, the gut remains viable, even when considerable mesentery is detached. The nearer to the gut the ligation is made of the mesenteric vessels, the less detachment of mesentery can be made and viable gut yet remain. From 16 to 20 cm. of gut may be denuded with subsequent omentopexy safely; 10 cm. may be denuded with omentopexy with gangrene. In the dog which recovered, after two denudations and two omentopexies the gut at the seat of operation was slightly smaller in size, and a little thicker, from edema.

Medical Record, New York.

September 12.

6 Relation of the Medical Profession to the Housing Problem. S. A. Knopf, New York.
7 Acute Intestinal Obstruction, with Special Reference to Intussusception. E. W. Peterson, New York.
8 *Abnormal Motility of the Stomach a Valuable Factor in Diagnosis of Gastric Lesions. M. R. Barker, Chicago.
9 *Lupus Erythematosus. J. P. Kanoky, Kansas City, Mo.
10 Preparation for a Genitourinary Diagnosis. J. J. Valentine, New York.
11 Keratoplasty. H. R. Lesser, New York.

8. **Motility of the Stomach and Gastric Lesions.**—Barker considers that the loss of gastric motility, characterized by long-continued stagnation of food in the stomach and the partial or complete absence of mucus in the gastric contents, is characteristic of cancer, and when such conditions prevail careful search for the Oppler-Boas bacillus should be made. If this bacillus is found the diagnosis of cancer is positive; if it is not found the patient should not be allowed to pass into that stage of the disease in which operative measures are futile, by waiting for this more positive element in the diagnosis before exploratory measures are taken. A large accumulation of mucus in the stomach is one of the important elements in the diagnosis of chronic gastritis. This is due, in a large degree, to faulty contact between the ingested materials and the nerve centers in the stomach walls causing gastric immotility, which, in turn, prevents the escape of accumulated mucus into the intestines. The vicious circle being thus formed is broken up in certain cases by long-continued lavage; hence one of the beneficial effects of this treatment in chronic gastritis. A prominent factor in the diagnosis of gastric ulcer is the exaggerated motility of the gastric walls. This is characterized by the absence of any portion of the test meal in the stomach a comparatively short time after its ingestion. Mucus is also almost or entirely absent from the stomach in this condition, being digested as quickly as deposited in the stomach by the ever-present overacid secretion, and being expelled from the stomach as quickly because of the exaggerated motility of the gastric walls.

9. **Lupus Erythematosus.**—Kanoky discusses this condition in general, and reports six cases from which he comes to the conclusion that the iodin-quinin, or iodin-salicin, method of treatment gives excellent results in a considerable percentage of cases of lupus erythematosus, especially if employed early in the disease. In cases in which the pathologic condition has been present for many years, these agents will often have to be supplemented by more vigorous measures. Of these salicylic-pyrogallic-collodion preparations are cleanly, efficient, cheap and easily obtained. The *x*-ray, while not so valuable here as in true lupus, is undoubtedly of assistance at times.

New York Medical Journal.

September 12.

12 *Explanation of Seeming Paradoxes in Modern Phthisiotherapy. S. A. Knopf, New York.
13 *Dangers of Excessive Sunlight in Tuberculosis. C. E. Woodruff, Fort Wadsworth, N. Y.
14 Cancer of the Rectum. J. P. Tuttle, New York.
15 Jaundice Due to Disease of the Biliary and Pancreas Passages. J. J. Gilbridge, Philadelphia.
16 *A Dermatitis Due to the Irritating Effect of Metol. N. T. Beers, Brooklyn.
17 Neurasthenia Ventriculi and Gastroptosis. H. Weinstein, New York.

12. **Paradoxes in Modern Phthisiotherapy.**—Knopf calls attention to the lamentable practice of the lay press in seizing on apparently contradictory statements published by medical men and converting them into sensational impeachments of the consistency of medical science. He next refers to articles published in New York newspapers and attributed to Major Woodruff of the United States Army. Knopf meets Woodruff's views in regard to the injuriousness of excessive sunlight, the particular susceptibility of blondes to tuberculosis, etc., by publishing in tabular form the result of an appeal to a number of the leading phthisiotherapists for answers according to their experience to the following six questions:

1. Do your statistics show that blonde patients do better in cold weather or cold climate regions than those having brown or black hair?
2. Have you noticed the reverse, that is to say, that brunette patients do better in warm weather or warmer climates than blondes?
3. In your opinion is sunlight harmful in cool or cold weather to the average tuberculous patient, providing he is careful in protecting his head?
4. Do you ascribe the improvement which the majority of tuberculous patients experience in winter in our temperate zones, when "taking the cure," to the cold, to the absence of sunlight, or to other reasons?
5. Have you any experience in solar therapy, that is to say, sun baths, and do you think them injurious or harmful in carefully selected cases under proper supervision?
6. Do you ascribe the relative wellbeing of the tuberculous patients in the morning as the natural sequel of sleep rest, quiet of the night, which the average healthy man also experiences, or to the absence of sunlight?

Summarizing the results a considerable majority have not found that blonde patients do better than brunettes in cold regions, or that brunettes do better than blondes in warm regions. All are agreed that sunlight is not harmful in cool or cold weather to the average tuberculous patient, providing the head is protected. Nearly all appear to hold that the improvement experienced during winter, when taking the cure in temperate zones, is due to the cold and not to the absence of sunlight. Many consider sunbaths beneficial, none injurious. The relative wellbeing of tuberculous patients in the morning also is attributed generally to rest and sleep, but in no case to the absence of sunlight. Knopf quotes passages from the letters of many of his correspondents. He admits, however, that from physiologic experiments on men and animals we have learned that "too much sunshine is as injurious as its total absence is deleterious," and he considers Major Woodruff right in some respects, for there is no doubt that in tropical countries the newly arrived person who has been born and raised in northern climes, be he blonde or brunette, unless he leads an exceedingly sober and careful life, and protects himself against the strong actinic rays of the sun and the intense heat of midday, is bound to suffer and become more easily a victim of endemic and epidemic diseases not excluding tuberculosis. Even in temperate zones, in hot weather when everyone feels better in the shade, it is absurd to expect the consumptive to be more comfortable in the sun. Knopf describes his method of prescribing a sunbath; he gives instances of the importance of individualization in the treatment of tuberculosis, and concludes that because we vary our treatment to the patient's individual conditions, sometimes even to his likes and dislikes, but always with the one point in view, to do the best for him, what seem like paradoxes, whether they refer to air, sunlight, water, climate, medicine or other remedial agents, are really the result of careful and painstaking individualization.

13. **Dangers of Excessive Sunlight in Tuberculosis.**—Woodruff replies to Knopf's article as above abstracted, and states that it was discovered by the Army, as early as 1900, that in all cases of tuberculosis white people in the tropics promptly perish unless they are sent home. The factors in this loss of resistance are heat, humidity, and in those with unpigmented skins, excessive light, and he quotes Sir Alfred Keogh, medical director of the British army, as supporting him with the assertion that investigations prove that the depressing effects in India are due to the actinic rays, and not to the heat rays, of the sun. To support his views as to the evil effect of sunlight in tuberculosis, Woodruff states that the tuberculosis mortality rate per 1,000,000 living is least in the cloudiest parts of Europe. Cloudy cities, like Amsterdam and London, have low rates, while sunny places like Moscow, St. Peters-

burg and Vienna, have high rates. He quotes the table from Hanscomb's 1908 report of the percentage of deaths from consumption to deaths from all causes in various occupations, to show that light or darkness may have opposite effects from what we now believe. He then discusses Knopf's points in detail and refers to the opposition of almost the entire profession in 1840, to Dr. George Bodington's opinion that tuberculosis should be treated in the open air, an opinion to which after all these years, the profession is now coming round. In 1840 the profession was strong in the opinion that cold air was fatal and they drove Bodington's patients away and closed this first modern sanatorium. Dr. Knopf, Woodruff asserts, is repeating the error—instead of giving facts he is giving opinions of the leaders. His "authorities" have never noticed any harm from excessive sunlight, not because it does not exist, but because they have never looked for it. Bodington's opponents never noticed the harm done by indoor treatment, and their opinion likewise did not prove that there was no damage by it.

16. **Metol Dermatitis.**—Beers points to the great increase of dermatitis among photographers which, in these days of amateur photography, embraces a large mass of people, from the irritant effect of metol (monomethyl-paramido-phenosulphate) which forms an ingredient in most of the developers on the market. He has found a saturated solution of paraffin in benzin, into which the fingers are dipped before developing, the best preventive. The condition must be treated symptomatically, with rest and protection of the affected parts, cathartics in a severe attack, and before the skin is broken some cooling astringent lotion such as lead and opium wash should be prescribed. After the skin is broken, care must be taken to protect the parts thoroughly and to use the blandest of applications. Zinc stearate makes a useful dusting powder; 1 or 2 per cent. of carbolic or salicylic acid may be added. When an ointment is indicated in this stage the following is mild and soothing:

R.	gm. or c.c.	
Hydrarg. chlor. mit.	65	gr. x
Acidi carbolici	65 to 1.30	or gr. x-xx
Ung. aquæ rosæ.	30	ʒi

M.

In the chronic form of the disease, when cracks form and the skin is indurated or scaly, an ointment containing one or more of the stimulating drugs gives the best results:

R.	gm. or c.c.	
Acidi salicylici	1 | 95	gr. xxx
Pulv. amyli	3 | 90 to 7.80	or ʒi to ʒii
Zinci oxidi	1 | 95 to 2.90	ʒss to ʒi
Ung. petrolati	30	ʒi

M.

R.	gm. or c.c.	
Ichthyolis	3 | 90	ʒi
Acidi salicylici	1 | 30	or gr. xx
Acidi borici	1 | 95	gr. xxx
Ung. zinci oxidi	30	ʒi

M.

To any one of these prescriptions resorcin or oil of cade may be added if necessary.

Medical Fortnightly, St. Louis.

August 25.

18 Korea and Japan. R. H. Eccles, Brooklyn, N. Y.
19 Two Cases of Raynaud's Disease. T. D. Woodson, St. Louis.

The Lancet-Clinic, Cincinnati.

August 29.

20 Surgical Treatment of Acute Intestinal Obstruction. W. A. Melick, Zanesville, Ohio.
21 *Internal Strangulated Hernia, or Internal Intestinal Strangulation. E. M. Brown, Chicago.
22 Excesses in Surgical Cleanliness. M. A. Austin, Anderson, Ind.
23 *Treatment of Pus Tubes. J. E. Cannaday, Hansford, W. Va.

21. **Internal Strangulated Hernia.**—Brown maintains that all internal cases of strangulated hernia or all internal strangulations show sufficiently early symptoms for an early diagnosis and operation before absolute occlusions have developed. When the diagnosis is obscure an exploratory operation should be done. In determining when a strangulated bowel is viable Brown follows these rules: A bowel is considered safe: 1, when on liberation of the constriction it receives circulation; 2, when the peritoneum is smooth, shiny and not blistered, whether dark in color or not; 3, when no thrombi are present in the mesenteric border. If, however, there is rupture, ulcer, perforation, complete thrombosis of the mesenteric vessels, permanent unyielding stricture, excoriated peritoneum and blackened bowel, which has lost all contractility, it should be condemned. As regards anastomosis: 1, In late moribund cases, in which time of anesthesia and manipulation are important elements, we should rapidly resect and turn the divided ends out through the incision; 2, in acute early cases, in which the small bowel is involved, we should remove liberally beyond the condemned portion, turn in the divided ends with a purse-string suture, and make a lateral anastomosis; 3, when large and small bowel are gangrenous, end-to-side anastomosis should be made; 4, in resection of large bowel the end-to-end anastomosis is preferable.

23. Abstracted in THE JOURNAL, Nov. 2, 1907, p. 1552.

Surgery, Gynecology and Obstetrics, Chicago.

August.

24 *Excision of the Rectum for Cancer. W. C. Lusk, New York.
25 Case of Hermaphrodism. G. B. Johnston, Richmond, Va.
26 *Case of Torsion of the Omentum. W. W. Grant, Denver, Colo.
27 *Case of Intra-abdominal Rotation of the Great Omentum, Unaccompanied with Hernia. W. Fuller, Chicago.
28 Pleural Reflexes. J. A. Capps and D. D. Lewis, Chicago.
29 *Advantage of the Elastic Ligature in Certain Cases of Anal Fistula. C. M. Echols, Milwaukee, Wis.
30 Case of Concealed Hemorrhage in Pregnancy, Contrasted with One of Extrauterine Pregnancy. G. E. Shoemaker, Philadelphia.
31 *Are Gloves and Masks Advisable in Surgery? E. S. Bishop, Manchester, England.
32 Case of Toxemic Pernicious Vomiting of Pregnancy, with Total Nitrogen and Ammonia Estimations. W. H. Buhlig and H. M. Stowe, Chicago.
33 Case of Linitis Plastica of the Stomach (Brinton) Cured by Jejunostomy. A. F. von Eiselsberg, Vienna, Austria.

24. **Excision of the Rectum for Cancer.**—In this monograph, for such it practically is, Lusk reports a case in a woman operated on with implantation of the sigmoid into the anus. He goes into detail in regard to the surgical anatomy and technic of the operation, the article being elaborately illustrated with half-tones accompanied by diagrammatic sketches of the pictures represented in half-tone.

26. Abstracted in THE JOURNAL, Feb. 1, 1908, p. 397.

27. **The Great Omentum.**—Fuller describes a case of intra-abdominal rotation of the great omentum, unaccompanied with hernia. He discusses the embryology, anatomy, and functions of the omentum, summarizes what is known regarding torsion of the omentum, adopts the classification of Corner and Pinches into abdominal, hernial, and hernial and abdominal, and discusses the etiology and mechanism, diagnosis, and treatment. He concludes as follows: 1. The great omentum should be regarded by the surgeon as an organ of vast importance, and its uses can not with safety be curtailed or compromised. 2. In all surgical operations requiring resection of the great omentum, the latter should be done in a careful manner, without leaving heavy or clumsy omental stumps uncovered by peritoneum, and the omentum at the completion of all operations should be unfolded and spread over the abdominal organs in a normal manner. 3. If the condition in any operation within the peritoneal cavity presents the slightest doubt as to the causes and nature of the extent of the difficulty, search for a complete and satisfactory explanation of the question in hand should include examination of the greater or gastrocolic omentum.

29. **The Elastic Ligature in Anal Fistula.**—Echols considers the operation by elastic ligature, while not applicable to all cases, such as the horseshoe fistula encircling the bowel, the operation of choice for ordinary complete fistula for the following reasons: 1. It preserves the contour of the anus and does not impair the function of the sphincter. 2. It is suitable for patients who can not or will not take a general anesthetic. 3. The period of complete disability of the patient after operation is less.

31. **Gloves and Masks.**—Bishop discusses the relation of gloves and masks to efficiency, and gives reasons for conclud-

ing that masks and gloves, however theoretically correct, hamper materially the surgeon's movements, and, therefore, may easily do far more damage to the prospects of a safe recovery —which is, after all, the main end in view—than would result if they were omitted.

Journal of Nervous and Mental Disease, New York.

August.

34 *Brain Tumor Localized and Completely Removed; with Symptomatology of Lesions Variously Distributed in the Parietal Lobe. C. K. Mills and C. H. Frazier, Philadelphia.
35 Herpes of the Membrana Tympani, Due to Zosteroid Affection of the Petrosal Ganglion. T. J. Orbison, Los Angeles, Cal.

34. Abstracted in THE JOURNAL, July 4, 1908, p. 68.

Atlanta Journal-Record of Medicine.

August.

36 *Sacroiliac Disease. C. R. Andrews and M. Hoke, Atlanta.
37 Examination of the Feces as an Aid to Diagnosis. J. N. Le Conte, Atlanta.
38 Use and Abuse of Drugs in Tuberculosis. W. M. Jones, High Point, N. C.
39 Chronic Gastric Ulcer: Its Surgical Treatment. E. G. Jones, Atlanta.
40 Obstetrical Work from Standpoint of General Practitioner. A. B. Croom, Maxton, N. C.
41 Variable Effects of Apomorphin. F. A. Boland, Atlanta.
42 *Improvement in Method of Determining if Gonorrheal Infection is Present in an Inflamed Prostate or Seminal Vesicle. E. Ballenger, Atlanta.

36. **Sacroiliac Diseases.**—Andrews and Hoke point out that the pelvic girdle is the structural base for the skeleton, and any instability of pelvic articulations must interfere with proper action of muscles attached thereto; conversely, any lack of development or alteration in tone of the muscles and ligaments protecting and holding the pelvic joints in position, must likewise render impossible their normal and anatomic relation and induce impaired function. Certain physiologic conditions bear a direct relation to relaxation of the sacroiliac joints. This is demonstrable in pregnancy and often during menstruation, and explains many of the backaches occurring in the menstrual period. The authors discuss the movement of the sacrum from an obstetric viewpoint, and state that with an existing excessive intestinal putrefaction, any injury or undue strain to a joint may precipitate a toxic inflammation. Such inflammations are common in the sacroiliac joints. They discuss the effect of position, recumbent and sitting. Lumbago is often simply a manifestation of a sacroiliac sprain. They discuss displacements and infectious processes, and call particular attention to the point that toxic inflammation due to intestinal putrefaction may be superimposed on any other condition of the sacroiliac joint. In cases of strain, long standing should be avoided and a correct attitude maintained. When sitting, lounging should be avoided; when recumbent, a firm pillow under the hollow of the back will prevent the lumbar spine from sagging. Adhesive plaster straps across the lower back and buttocks, or a belt, will be of service.

42. **Gonorrheal Infections.**—Ballenger describes a mode of ascertaining if gonococci are present in an inflamed prostate or seminal vesical by creating a chemical urethral discharge, and when it is well established, sealing the meatus with collodion or adhesive plaster and massaging the secretion from the prostate or vesicles into the inflamed canal, where it is left until the patient urinates. Gonococci will proliferate if placed in this favorable environment and may be demonstrated in the subsequent discharge.

United States Naval Medical Bulletin, Washington, D. C.

July.

43 *Treatment of Tuberculosis by Administration of Mercury. B. L. Wright, U. S. Navy.
44 Pathologic Anatomy of Guha. A. J. Geiger, U. S. Navy.
45 History of Epidemics in Guam. F. E. McCullough, U. S. Navy.
46 *Result of 300 Examinations of Feces with Reference to the Presence of Amebas. R. E. Hoyt, U. S. Navy.
47 Case of Banti's Disease with Splenectomy and an Arteriovenous Anastomosis. E. A. Vickery, U. S. Navy.
48 Modification of the Crile Cannula. E. A. Vickery, U. S. Navy.

43. **Mercury in Tuberculosis.**—Wright believes that mercury is a specific in tuberculosis and that it has a destructive effect on the tubercle bacillus. His other papers on this subject were abstracted in THE JOURNAL, July 4, 1908, page 75, and September 12, page 944.

46. **Examination of Feces for Amebas.**—Hoyt analyzes the results of 300 examinations of feces, made as part of the regular laboratory routine at the Canacao Naval Hospital, P. I. In 200 cases blood examinations were also made, and in 100 an occult test was made. Of the 300 patients only 20 were admitted on the diagnosis of dysentery. The author concludes from these observations that, reasoning from a knowledge of the power of other forms of intestinal parasites to produce symptoms of a general nature, such as those mentioned, and taking into consideration the reported findings at autopsy in many cases of amebic infection without apparent symptoms of dysentery, it would be unwise to ignore this organism as an etiologic factor in affections other than dysentery.

American Journal of Physiology, Boston.

August.

49 Comparative Study of the Temperature Coefficient of the Velocities of Various Physiologic Actions. C. D. Snyder, Berlin, Germany.
50 *Kidney Secretion of Indigo Carmin, Methylene Blue and Sodium Carminate. G. D. Shafer, Ithaca, N. Y.
51 Comparative Physiology of the Invertebrate Heart.—A Note on the Physiology of the Pulsating Blood Vessels in the Worms. A. J. Carlson, Chicago.
52 *Resection and End-to-End Anastomosis of the Oviduct in the Hen, without Loss of Function. R. Pearl and F. M. Surface.
53 *Hydrolysis of Vignin of the Cow-Pea (Vigna Sinensis). T. B. Osborne and F. W. Heyl.
54 Experiments Bearing on the Nature of the Glycogenolytic Fibers in the Great Splanchnic Nerve. J. J. R. MacLeod, Cleveland, Ohio.
55 Influence of Stimulation of the Great Splanchnic Nerve on the Rate of Disappearance of Glycogen from the Liver, Deprived of Its Portal and Systemic Blood Supplies. J. J. F. MacLeod and H. O. Ruh, Cleveland, Ohio.

50. **Kidney Secretion.**—Shafer reviews the literature concerning the theories of secretion of urine and the experimental work with various coloring matters that bears on these theories, and finally describes his own experiments with indigo-carmin, methylene blue and sodium carminate. His results, in the main, support the theory of Heidenhain, that most organic salts and free acids are secreted by the epithelium of the convoluted tubules. The experiments show that indigo-carmin, whether in its colored or colorless form, is excreted by the cells of the tubules, and there is no direct evidence that indigo-carmin is reduced in the living animal body, and it is, at least, not completely reduced. Methylene blue is reduced and is excreted by the epithelium of the tubules in the colorless condition, but is oxidized to the blue compound to a large extent, at least, in the bladder. Sodium carminate is excreted by the glomeruli, but there is reason to think that a slow excretion also takes place by way of the convoluted tubules.

52. **Anastomosis of Oviduct.**—Pearl and Surface show that the oviduct in the hen can be resected and an end-to-end anastomosis made without permanent loss of function, the hen producing practically normal eggs.

53. **Hydrolysis of Vignin.**—The analysis of the product of hydrolysis of the vignin of the cow pea, according to Osborne and Heyl, is able to account for only about 70 per cent. of the material by the determination of known substances. It is not likely that any quantity of tryptophan is missed, and there is no evidence that the missing substance is to be accounted for by a carbohydrate residue in the proteid molecule, so that the almost inevitable conclusion is that there are still unrecognized substances among the products of the decomposition of proteins.

American Journal of Public Hygiene, Boston.

August.

56 Determination of Oxygen Consumed in Waters. E. M. Chamot, Ithaca, N. Y.
57 Effect of Heating on the Determination of Leucocytes in Milk. H. L. Russell and C. Hoffman.
58 Diphtheria Diagnosis. B. R. Rickards, Boston.
59 Mathematics of the Bacterial Count. H. W. Hill, Minneapolis.
60 *The House Fly as an Agent in the Dissemination of Infectious Diseases. T. Smith, Boston.
61 *Disinfection of Books. B. R. Rickards, Boston.

60. **The House Fly as a Disseminator of Infectious Diseases.**—Smith points out that the war on flies can not be successfully waged with fly-paper and fly-traps, but must be waged,

as was done with mosquitoes, in the country of the animal itself, that is, against its breeding-places. Flies may be divided into biting and non-biting, the former including horse flies and stable flies, and the latter the house fly and various flesh flies and blow flies. The development of flies is practically the same as and resembles generally, that of mosquitoes, if we substitute putrefactive and fermenting animal and vegetable matter for water as a breeding place. The fly is essentially a scavenger and would be beneficent rather than injurious were it not for its habit of bringing disgusting material from its normal feeding places and depositing it on food. The breeding places are probably neglected garbage and stables with accumulating manure or a dump heap. At the seashore dead fish form good breeding grounds. Smith points out that all movements in the interest of the public health broaden out from their original narrow intent, and the campaign against flies would eventuate in a campaign for general cleanliness.

61. **Disinfection of Books.**—Rickards concludes that formaldehyd is inefficient as a means of disinfecting books, while steam sterilization is rapid and efficient, and does not materially harm the books except those with leather binding. The books should be subjected to dry steam for at least thirty minutes at from fifteen to twenty pounds' pressure.

University of Pennsylvania Medical Bulletin, Philadelphia.

August.

62 *Brain Tumor Localized and Completely Removed, with Some Discussion of the Symptomatology of Lesions Variously Distributed in the Parietal Lobe. C. K. Mills and C. H. Frazier, Philadelphia.
63 Two Cases of Streptococcus Infection which Gave a Typical Widal Reaction. J. Tyson and R. Pemberton, Philadelphia.
64 Examination for Carbon Monoxid Hemoglobin of the Blood of a Miner whose Death Occurred in a Recent Gas Explosion in a Bituminous Coal Mine, with Quantitative Determination of the Carbon Monoxid Contained in the Blood. J. Marshall, Philadelphia.
65 Medical Practice in Canton, China. A. H. Woods, Bryn Mawr, Pa.
66 *Simple and Accurate Method for Measuring the Clotting Time of the Blood. M. Solis-Cohen, Philadelphia.

62. Abstracted in THE JOURNAL, July 4, 1908, p. 68.

66. **The Clotting Time of the Blood.**—Solis-Cohen discusses the various methods that have been employed for measuring the clotting time of the blood. He has devised an apparatus based on Milian's method, but which eliminates the errors due to evaporation and temperature change. It consists of a German Stender dish, 80 mm. in diameter and 40 in height, a small pan with an outlet and with a bracket for holding a thermometer (an ordinary tin baking pan, the outlet and bracket being made by a tinsmith will do), a bath thermometer, a wide elastic band, a piece of rubber tubing, a stop-cock and a millimeter scale. The rubber tubing is attached to the outlet of the pan, and clamped with a stop-cock, and the thermometer slipped into the bracket or holder. The pan is filled with water at 37 C. (98 F.) and maintained there by the addition of hot or cold water as required. The Stender dish is cleansed, the rim smeared with lanolin or petrolatum, the lid thoroughly cleansed and applied and held in place by the rubber band. The dish is then placed, everted, in the pan of water. The ear or finger is next thoroughly cleansed and given a free puncture with a clean, sharp instrument, so that the blood flows freely without undue pressure. The Stender dish is removed from the water, quickly dried, and the elastic band removed. The first drop of blood is wiped off and note is made of the time the second drop appears. This drop, while on the finger or ear, is lightly touched to the upper surface of the inverted lid of the Stender dish held horizontally. The part is then wiped off and several other drops are similarly deposited on the lid on either side of the median line, the time of the appearance of each drop being also noted. The dish is then placed on the lid and the rubber band applied. Placing the millimeter scale under the inverted dish, the size of the different drops is quickly measured and noted. Only those drops are regarded whose diameter measures 5 mm. or 6 mm. The dish is then placed back in the water bath with the lid underneath. At intervals the dish is removed from the water and held vertically, while the contour of the drops is rapidly observed from the side or the density studied by looking at the drops through the lid. As quickly as possible the dish is returned to the horizontal position and replaced in the water. So long as, when observed from the side, the drops sag, are tear-shaped or pear-shaped, or, when looked at full, are denser below and clearer above, coagulation has not occurred. As soon as the drop is rounded on profile view, and of the same density throughout when seen from the front, coagulation is completed. To confirm this, the dish is removed from the lid and the clot is picked off with a needle or straw. The time at which coagulation was first observed is noted, and the period between this and the moment the drop appeared on the part is taken as the clotting time. With this method results are surprisingly constant.

Northwest Medicine, Seattle.

August.

67 *Organization and Centralization of Medicine and Surgery of the Northwest. R. C. Coffey, Portland, Ore.
68 Standards of Medical Education. A. C. Panton, Portland, Ore.
69 *Practical Methods of Dealing with Quacks and Quackery. A. W. Smith, Portland, Ore.
70 Value of Vision in Its Relation to Accident Insurance and Legal Indemnity. H. V. Würdemann, Milwaukee, Wis.

67. Abstracted in THE JOURNAL, Aug. 29, 1908, p. 780.

69. **Quacks and Quackery.**—Smith says that there are two special reasons for the Pacific Coast being infested with quacks: namely, failure on the part of the public to appreciate the quack in his true light, and laxity of law enforcement. The quack hitherto has not been prosecuted, because the public deemed him harmless, but now that the masses are being educated to the dangers of his business it is time to enforce the laws against fraud and misrepresentation. Unfortunately, the daily papers, as a rule, are not in sympathy with the movement to make the quack live up to the letter of the law. The campaign against quacks has brought to light some startling cases. The author reports one in which a quack extorted $500 from poor people, who had to mortgage all they possessed to raise the money for the "cure" of a cancer patient already at the point of death, and who died in twenty-four hours. Yet this quack had the assurance to advertise this as one of his successful cases, cured by his treatment. He was arrested, convicted, fined and sentenced to hard labor. The profession of Portland has secured sixteen convictions of quacks for practicing medicine without a license. To rid ourselves of these undesirable citizens all that is necessary is a united profession. We must rally round the medical associations and make them stand for something, electing officials with the courage of their convictions. We must banish the indifference that has hitherto characterized us as a profession. A bill making it unlawful for any newspaper in Oregon to publish any medical advertisement of an indecent nature passed both the house and senate, but was lost (or stolen) and not located until too late for the governor's signature to make it a law. A new bill on the same lines will be presented to the next legislature.

Journal of the Oklahoma State Medical Association, Guthrie.

August.

71 *Surgical Affections of the Gall Bladder. L. Long, So. McAlester.
72 Purposes and Attainments of Cystoscopy and Demonstration of the Author's Universal Cystoscope. B. Lewis, St. Louis, Mo.
73 Extrauterine Pregnancy. A. A. West, Guthrie.

71. **Affections of the Gall Bladder.**—Long reports three cases, one of which presents peculiar features. The patient was a white woman, aged 46, with a history of illness and invalidism covering eleven years. Extreme jaundice was present. A diagnosis had been made of obstruction of the common duct, probably by stone, with possibility of cancer as a complication, the last being suggested by the patient's rapid decline during the preceding two months. At the operation not the least remnant of the gall bladder could be found, nor could the common or cystic ducts be made out. A mass of adhesions involved pylorus, duodenum, gall-bladder region and under surface of the liver. The pancreas was felt as a hard, resisting body. A diagnosis of cancer was made, the abdomen closed, and the family warned of the probable outcome. The patient did well and in two weeks was out of hospital, declaring she had never felt better for years. Moreover, she

has steadily improved in the past six months and is still improving. Jaundice has disappeared, she eats heartily, walks erect, goes anywhere she wishes to, and has gained twenty pounds in weight. The author can only account for this remarkable result by supposing that in breaking up adhesions to outline the structures of the bile-tract area he released the common duct, so that its lumen would again permit the flow of bile fluid.

Journal of the Michigan State Medical Society, Detroit.

August.

74 *Problems in Preventive Medicine. H. Ostrander, Kalamazoo.
75 Treatment of Joint Tuberculosis. E. H. Ochsner, Chicago.
76 *Case of Obstetrics with Sequelæ. W. P. Manton, Detroit.
77 *Treatment of Chronic Diseases of the Heart by Carbonated Mineral Baths and Auxiliary Exercises. W. L. Wilson, St. Joseph.
78 *Diet and Digestion. F. J. Groner, Grand Rapids.

74. Abstracted in THE JOURNAL, Aug. 22, 1908, p. 698.

76, 77, 78. Abstracted in THE JOURNAL, Aug. 29, 1908, pp. 784, 786.

New York State Journal of Medicine, New York.

August.

79 The Obstetric Forceps. J. K. Quigley, Rochester.
80 *Method of Appendicectomy. T. L. Deavor, Syracuse.
81 *Diffuse Peritonitis in Women, with Report of Fifty Cases. E. McDonald, New York.
82 Tuberculous Salpingitis. Results of Surgical Treatment in Four Recent Cases. J. O. Stranahan, Rome.
83 *Traumatism as an Etiologic Factor in Appendicitis. J. P. Warbasse, Brooklyn.
84 Peritoneal Adhesions. A. H. Traver, Albany.
85 Treatment of General Peritonitis. H. C. Rooth, Buffalo.
86 Unhealthy Tonsils the Cause of Grip. T. B. Loughlen, Olean.
87 Porro Cesarean Section. F. H. Stuart, Brooklyn.
88 Lives of Officers of the Medical Society of the State of New York. J. J. Walsh, New York.

80. **Appendicectomy.**—Deavor describes a method which he has used in a fairly large number of cases, some being interval cases, others suppurative, and others gangrenous, with or without perforation. The following are the steps in the operation, some of which are common to all methods: Incision and delivery of the appendix; ligation and division of the mesentery; dissection of peritoneal cuff back to the cecum; ligation and excision of the appendix, and disinfection of the stump; ligation of peritoneal cuff over stump; union of mesenteric stump with that of the appendix; closure of incision.

The appendix is delivered with as little of the cecum as possible, but this will vary with the individual case. Deavor's custom is usually not purposely to displace the omentum and intestines in searching for the apppendix, but while traction is being made with the left hand, the right index and middle fingers are carried at once to the right side of the colon, then downward to the cecum, when, without seeing the longitudinal band of muscle fibers, the appendix is found and lifted out. The mesoappendix, when present, is ligated in section, or preferably in one mass, half an inch from the cecum, the curved needle being carried close to the body of the appendix. This ligature is left long. When the mesoappendix is absent or very small, the appendicular artery alone is tied. Division of the mesentery greatly relieves the appendix and gives immediate room, and the ease with which a peritoneal cuff can be rolled back to the cecal junction is known to every one. This cuff should be long enough to allow for retraction. The body of the appendix is then ligated close to the cecum and excised. Disinfection of the stump is accomplished by means of the cautery, or better by carbolic acid. A blunt probe without cotton reaches all parts of the stump and its lumen. It is a wise precaution to displace the residue from the part of the appendix to be ligated, before placing the ligature, using a dressing forceps. The field having been cleansed and dried, all sponges are now removed, and the peritoneal cuff is returned and ligated like a sack over the end of the stump and the ligature tied with that of the mesentery previously left long. This brings the cut edges together and practically obliterates all dead space and raw surfaces. The wound is then closed. Deavor discusses the forms of incision and also the question of ligature. So far, he has used only chromicized catgut, and he mentions an experiment to show that without very strong traction a tight, durable knot can hardly be formed with dry catgut, but that by slightly softening the same material before using very little force is required to produce a closely fitting knot, which will not relax its hold on further softening by the tissues.

81. Abstracted in THE JOURNAL, Feb. 8, 1908, p. 477.

83. **Traumatism and Appendicitis.**—Warbasse discusses the part that traumatism can play in producing appendicitis, and concludes as follows: The decision must be reached on two grounds: the association of the two conditions (appendicitis following traumatism), and the well known and accepted principle of surgical pathology that traumatism in any tissue predisposes and conduces to inflammation. The appendix, by virtue of its position and structure and the history of its inflammation, falls under both these stipulations. It is susceptible to traumatism; it sometimes is injured, and its inflammation sometimes follows such injury. There is every reason, therefore, to regard traumatism as an etiologic factor in appendicitis.

Vermont Medical Monthly, Burlington.

August 15.

89 *Partial Thyroidectomy in Treatment of Exophthalmic Goiter. A. P. Heineck, Chicago, Ill.

89. This article by Heineck appeared under another title in *Surgery, Gynecology and Obstetrics*, December, 1907, and was abstracted in THE JOURNAL, Feb. 1, 1908, page 401. It was also published as an original article in the *Chicago Medical Recorder*, January, 1908, and in several other journals. Apparently the only thing new in the present article is the title.

Chicago Medical Recorder.

August 15.

90 Treatment of the Commoner Penetrating Wounds of the Eyeball. F. Allport, Chicago.
91 Psychic Treatment. J. Grinker, Chicago.
92 *Present Status of the Relation of Bovine to Human Tuberculosis. C. J. Whalen, Chicago.
93 Conservative Drainage of High Pelvic Abscess. R. C. Turck, Jacksonville, Fla.
94 Carcinoma of the Rectum; Comparative Results of Operative Procedures. J. R. Pennington, Chicago.
95 Desmoid Reaction. A. D. Kohn, Chicago.
96 Repair of Superficial Perineal Lacerations with Michel's Clamps. O. Betz, Heilbronn, Germany.
97 Cicutine. W. F. Waugh, Chicago.

92. **Bovine and Human Tuberculosis.**—Whalen discusses the relation of bovine and human tuberculosis, and concludes that experimental work strongly favors the view that infection in pulmonary tuberculosis takes place, in a majority of instances, through the respiratory and not the alimentary tract, though there is good evidence to show that intestinal infections do sometimes lead to pulmonary tuberculosis.

Journal of Cutaneous Diseases, New York.

August.

98 *Occurrence of a Proliferating Cestode Larva (*Sparganum proliferum*) in Man in Florida. C. W. Stiles, Somerville, Mass.
99 Cholitis Exfoliativa. M. L. Ravitch, Louisville, Ky.

98. Abstracted in THE JOURNAL, Oct. 12, 1907, p. 1305.

Denver Medical Times and Utah Medical Journal, Denver.

August.

100 Typhoid Fever. E. Stuver, Ft. Collins, Colo.
101 Postoperative Intestinal Obstruction. F. C. Buchtel, Denver.
102 Recent Interesting Surgical Cases. F. Finney, La Junta, Colo.
103 Phlebitis Following Abdominal Operations. A. H. Harris, Denver.
104 New Dressing for Fractured Clavicle. J. Lindahl, Denver.

Mississippi Medical Journal, Vicksburg.

August.

105 Chloroform and Ether Anesthesia. O. N. Arrington, Brookhaven.
106 What Remedies Shall We Use? H. C. Buck, Friars Point.
107 Typhoid Fever. A. P. Alexander, Sledge.

St. Louis Medical Review.

August.

108 Review of Serum Anaphylaxis. R. L. Thompson, St. Louis.
109 Can the Aged Prostatic be Prevented? J. L. Boogher, St. Louis.
110 Large Dermoid Cyst of Ovary with Carcinomatous Degeneration Involving One-Third of the Bladder: Extirpation: Recovery. J. F. Menestrina, St. Louis.

Journal of Advanced Therapeutics, Rahway, N. J.

August.

111 Case of Lupus, Showing the Effects of Treatment of Concentrated White Light. F. Barrett, Westbrook, Maine.
112 Removal of Superfluous Hair by the *X*-Ray. F. A. Bardwell, Boston.
113 Treatment of Various Conditions with Static Electricity and High Potential Currents. T. H. Cannon, Baltimore.

American Journal of Urology, New York.

August.

114 Interesting and Obscure Cases. L. W. Bremerman, Chicago.
115 Case of Orchidopexia by Hahn's Method. Joseph Budde, Two Harbors, Minn.

Western Medical Review, Omaha, Neb.

August.

116 Induction of Labor. C. W. Pollard, Omaha.
117 Malignant Endocarditis. R. W. Bliss, Omaha.
118 Bier's Hyperemia. C. W. M. Poynter, Lincoln.
119 Adding a Grain of Salt to Professional Ethics. C. J. Alger, Leigh.

American Practitioner and News, Louisville.

August.

120 Treatment of Pneumonia. A. E. Gardner, Louisville.
121 Life Insurance Examiner. O. P. Nuckols, Louisville.
122 Value of Urine in Diagnosis. E. S. Allen, Louisville.
123 Health Bureau Work. G. B. Jenkins, Louisville.

Journal of the South Carolina Medical Association, Greenville.

August.

124 Case of Torsion of the Omentum. T. P. Whaley, Charleston.
125 Proposed Work of the South Carolina Antituberculosis League. A. B. Patterson, Barnwell.
126 Nervous Manifestations of Gastrointestinal Indigestion. J. C. Sosnowski, Charleston.
127 Tuberculosis in State Prison. F. W. P. Butler, Columbia.

Journal of the Kansas Medical Society, Kansas City.

August.

128 Pseudoleukemia. H. W. Manning, Eureka.
129 Gastrointestinal Neuroses. W. R. Heylmun, Iola.
130 Gunshot Wound of Abdomen. W. S. Grisell, Ransom.
131 Treatment of Fractures of the Leg G. P. Marner, Marion.
132 Acute Glaucoma. J. G. Dorsey, Wichita.

Alabama Medical Journal, Birmingham.

August.

133 Sacroiliac Strain. E. L. Scott, Birmingham.
134 Lead Poisoning. Z. B. Chamblee, North Birmingham.
135 Conservative Surgery of the Ovaries and Tubes. E. M. Robinson, Birmingham.
136 Autointoxication. W. D. Partlow, Tuscaloosa.
137 Fused or Horseshoe Kidney. B. Robinson, Chicago.
138 Tetany. G. L. Faucett, Gadsden.

Bulletin of the Johns Hopkins Hospital, Baltimore.

August.

139 Organs of Respiration. W. G. MacCallum, Baltimore.
140 Right Mesojejunal Hernia. W. G. MacCallum and R. T. Miller, Baltimore.
141 Abnormalities of the Pulmonary Blood Vessels. C. R. Meloy, Baltimore.
142 Tuberculosis of the Stomach; Tuberculous Cavities of the Liver; with Report of a Case. M. C. Winternitz, Baltimore.
143 Case of Sigmoid Kidney. M. C. Winternitz, Baltimore.
144 Relation of Bronchial Stenosis to Bronchiectasis. W. L. Thornton and J. P. Pratt, Baltimore.
145 Occurrence of Newly Formed Lymphatic Vessels in Malignant Growths, with Demonstration of Their Origin and Ingrowth in the Metastases of a Round-Celled Sarcoma. H. M. Evans, Baltimore.
146 Effects of Feeding Animals on an Iodine-Free Diet. A. R. Dochez, Baltimore.
147 Changes in the Pancreatic Duct and Their Relation to Chronic Pancreatitis. M. C. Winternitz, Baltimore.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

August 29.

1 *Student's Number.

1. This number of the *Lancet* contains no original articles, but is devoted entirely to information concerning medical education and practice in the British Empire. In addition to an address of counsel to students it contains a statement of the powers and duties of the General Medical Council, the regulations and requirements of all the medical examining bodies throughout the United Kingdom, a list of scholarships awarded by the various schools in aid of medical study, the regulations for the government medical services, the requirements for the various diplomas in state medicine and public health, and the regulations for diplomas in dentistry. There is also a review of the conditions under which British (and in some cases, no doubt, other) practitioners are permitted to practice in various foreign countries.

British Medical Journal, London.

August 29.

2 Significance of Some of the Symptoms of Appendicitis from Point of View of Urgency of Operation. C. M. Moullin.
3 Fibrolysin in Cicatricial Pyloric Obstruction. M. B. Steuart.
4 Case of Acute Intestinal Obstruction in a Hemophilic. B. H. Kingsford.
5 *Points in the Anatomy and Pathology of the Hernial Sac. E. S. Carmichael.
6 *Treatment of Chronic Empyema by Hyperemia and Hypertransudation. J. S. Dick.
7 *Smoke Abatement. H. A. Des Voeux.
8 National Military Service and National Physique. J. F. Barker.
9 *Administrative Treatment of Phthisis. A. Walker.
10 Coordination in Pathology and Public Health. F. G. Bushnell.
11 Death Certification and Death Verification. J. B. James.
12 Infant Mortality. S. G. Moore and A. E. Naish.
13 State Regulation of Proprietary Medicines and Foods. G. E. Prichard.
14 *Hampton Interpretation of the Operation of Sewage Purification. G. L. Travis.
15 Lodging Houses Under the Public Health Acts Amendment Act, 1907. J. C. McWalter.
16 The Causes of Dyspnea. J. S. Haldane.
17 Pulmonary Ventilation in Disease. A. P. Beddard and M. S. Pembrey.
18 Changes in the Pituitary Body After Removal of the Thyroid. P. T. Herring.
19 Pancreatic Juice and Glycosuria. J. S. Goodall and H. G. Earle.
20 Suggestion in Its Physiologic Bearings. R. J. Anderson.
21 Appetite: an Attempted Analysis of the Physiologic Factor. J. S. Goodall.
22 Teaching and Examination in Anatomy. C. Addison and David Waterston.
23 Mechanism of Respiration in Health and Disease. A. Keith.
24 Meso-photography and Its Application to Delicate Unfixed Embryos. C. J. Patten.
25 Significance of Fusion of the Atlas to the Occipital Bone, and Manifestation of Occipital Vertebræ. G. E. Smith.
26 The Hard Palate and Maxilla in Primates. R. S. Anderson.
27 Right-handedness. G. E. Smith.

5. **Hernial Sac.**—Carmichael describes a series of observations from which he draws the following conclusions: 1. In early childhood, clinical evidence, gained by examining the spermatic cords of apparently normal children, shows that between 50 and 75 per cent. present thickening due to incomplete closure of the funicular process. 2. The anatomic conditions present in patients operated on support the view of a congenital origin, as shown by the relation of the sac to its coverings, and its presence in spite of a narrow canal and a small external abdominal ring. 3. The histologic and naked-eye appearances of the sac in most cases do not afford reliable evidence of its congenital origin or otherwise, although a markedly thickened sac, if small, is suggestive of the embryonic condition.

6. **Suction Hyperemia in Chronic Empyema.**—Dick reports a case in which, two years from the onset of pneumonia and nine months from the final operation for a subsequent empyema, there was still a cavity having a capacity of over two drams, and secreting over one dram of pus daily. This had been *in statu quo* for three months, so that a cure by drainage was despaired of. An attempt was, therefore, made to increase the transudation of blood to the infected area, as follows: A cupping glass with rubber exhaust was applied, so as to include the sinus and portion of the chest wall bounding the cavity externally. The application at first was rather painful. While the cupping glass was used the patient inflated a football. The cavity was filled daily with sodium citrate chlorid solution recommended by Wright (*Practitioner*, May, 1908; abstracted in THE JOURNAL, July 4, 1908, p. 80) in the article which suggested to the author the use of this plan. [The solution consists of four parts of common salt and one part of sodium citrate dissolved, when required, in 100 parts of boiling water.] An increase in the amount of discharge ensued. Mercury biniodid solution (1 in 2,000) was substituted after a week, and the discharge diminished. The alternation of the two solutions was continued with alternating increase and diminution of the discharge, until at the end of six weeks the cavity held about ten minims and in two

weeks admitted only a fine probe and was quite dry. While the case is not conclusive, the fact that the condition had been stationary for three months makes it probable that the case is one of those referred to by Godlee, in which the cavity walls having been drawn in to the utmost possible extent, granulation must be relied on to fill the cavity, but owing to tension preventing a continuation of the process, the pleura becomes lined with a perfectly smooth surface secreting pus, but developing no further granulations.

7. **Smoke Abatement.**—Des Voeux discusses the smoke evil and particularly attacks the kitchen chimney. He lauds the use of gas for cooking and points out that its expense is due to wastefulness. In London this has been overcome by the use of a slot system, whereby gas for cooking can be bought by pennyworths at a time. One penny (two cents) in the slot gives from 25 to 30 cubic feet of gas. Of the substitution of gas fires for coal fires, he says that all the objections are due entirely to inadequate gas fitting. A properly constructed gas fire, carefully fitted with a pipe large enough to take away the products of combustion, is sanitarily perfect.

9. **Administrative Treatment of Tuberculosis.**—Walker emphasizes the importance of sanatoriums in the treatment of early cases of phthisis and urges the extension of this treatment to the poorer classes. He discusses the financial aspect of the question.

14. **Sewage Purification.**—Travis essays to show that the purification of sewage by artificial processes has been misunderstood from its inception, and that the phenomena attending it have been wrongly interpreted throughout. His paper is devoted to defining and proving the Hampton interpretation of sewage purification phenomena, which teaches that the purification of sewage is essentially the result of an act of desolution. It affirms that the impurities contained in the sewage, whether in suspension or in a condition of solution, are by this operation, as a preliminary effect, removed from the liquid as by a process of precipitation. This initial separation from the sewage of its solid constituents as particulate matters can be shown to occur under all conditions; therefore, it is held to constitute the most important, as it is also the most manifest, effect in every treatment area. He affirms that the correctness of any interpretation of sewage purification phenomena is evidenced by, and is proportional to, the fidelity of its adherence to the following propositions: 1. That the complete operation of sewage purification is a complex one, in which physical, chemical and biolytic—in its widest sense—factors are severally engaged; 2, that the physical operation manifests itself in removing the suspended, and the more highly complex so-called soluble organic, as well as some inorganic, matters from the sewage; 3, that the chemical operation assists the physical in completing the desolution of the liquid, and takes its part in the subsequent changes induced by biolysis; 4, that the biolytic operation is concerned in a very minor degree with the purification of the sewage itself, inasmuch as its effects are almost entirely evidenced by the changes occurring in those substances which have been removed from the sewage, rather than by being associated with those which are contained therein; and 5, that the biologic operations on the deposited and absorbed solids, whether on those arising from the suspended, or on those resulting from the so-called soluble solids, are always attended by huge, only partially reduced, and practically persistent accumulations. The important principles involved in the above enumerated propositions are that the physical and chemical operations of desolution manifest themselves by depriving the sewage of its impurities during the transit of that liquid through the artificial treatment area; and that the biolytic operations never find expression in the complete conversion of the deposited organic matters, nor, indeed, could they do so were the area increased a hundredfold.

Medical Press and Circular, London.

August 26.

28 Treatment by Hyperemia of Bier. Professor Gebele.
29 Public Health and Poor-Law Medical Services. A. D. Edwards.
30 *Incidence of Pulmonary Tuberculosis in Children of School Age. J. A. Coutts.
31 Methods of Dealing with Suppuration in the Maxillary Sinus. S. Thomson.

30. **Pulmonary Tuberculosis in School Children.**—Coutts quotes various authors to show that, notwithstanding a consensus of opinion that pulmonary tuberculosis is rarer in children than in adults, there is great variation in opinion as to its absolute frequency in the young. His own experience leads him to regard it as not only comparatively rare, but as exceedingly rare. The rarity of phthisis in children he regards as the one safeguard against the spread of tuberculosis through the agency of schools.

Australasian Medical Gazette, Sydney.

July 20.

32 School Hygiene. J. H. Evans.
33 Tetanus. A. G. Salter.
34 Manifestations of Filariasis as It Appears in Queensland. E. S. Jackson.
35 Diphtheria Carriers. W. G. Armstrong.
36 Diphtheria in West Australia. H. Cumpston.
37 Curious Case of Urethral Obstruction. H. C. Hinder.
38 Three Interesting Intestinal Cases. E. H. Binney.
39 Sarcomatous Tumor of Ileum, Removed by Resection of Bowel and End-to-End Anastomosis by Suture—Recovery. R. Worrall.
40 *Treatment of Inflammation by Passive Congestion. C. MacLauren.
41 Calmette's Ocular Reaction. C. Reismann.

40. **Constriction Hyperemia.**—MacLauren gives a practical account, for the practitioner, of the method of using constriction hyperemia. A rubber bandage 2½ inches wide is applied lightly around the limb, well above the inflamed part, so as to slow the venous current without interfering with the arterial inrush. The test of sufficiency is that the limb should show a slight reddening, slightly bluish in parts. At the end of twelve hours the limb should be slightly swollen, and there should be no definite blueness or pain. In acute inflammations the bandage is kept on at first for twenty-two hours, then removed for two hours, the limb being elevated. Treatment should be begun in the early morning. The patient should not go to sleep until it is seen how the limb is going to behave. There should be no pain or inconvenience whatever; these indicate a too tight bandage. The duration of application is decreased daily till the inflammation is entirely well. Its use should be continued for two or three days longer, lest the symptoms break out again. Ten hours is the duration of application at first in chronic inflammations, lengthened by two hours daily until twenty-two hours' application is reached. Except in tuberculous disease, gentle massage is given during the interval. A cupping glass is the easiest mode of application to the breast. A light bandage round the neck is used by Bier in mastoid disease.

Indian Medical Gazette, Calcutta.

August.

42 *Treatment of Leprosy with *X*-Rays and High-Frequency. E. A. C. Matthews.
43 *Rat Destruction Operations in the Punjab. S. Browning-Smith.
44 Flea-Killing Power of Certain Chemicals. R. D. Saigol.
45 Mode of Spread and Prevention of Plague. A. Buchanan.
46 Enteric Fever in the Native Army. G. S. Thomson.

42. **X-Rays in Leprosy.**—Matthews reports seven cases of leprosy treated with the *x*-rays, and says that the results in these cases go to show that exposure to *x*-rays forms a valuable means of treating leprosy in all forms and stages of the disease.

43. **Rat Destruction.**—Browning-Smith describes the methods of rat destruction by poison, traps and infective disease, and discusses their effect on plague. The evidence shows that rat destruction is a procedure of great value for the prevention and mitigation of plague epidemics. It is also a preventive, and has the further advantage in India that it interferes little with the customs and comforts of the people. He prefers trapping, but when that can not be carried out poisoning may be used. It is inadvisable to kill rats in a town by poison when an epidemic is at all widespread or when it is well started in small villages, for the rat epizootic is usually in advance of the epidemic. Trapping should be extended to every town in uninfected districts that is likely to become an important center for diffusing plague infection, should the disease be introduced.

Annales de Gynécologie et d'Obstétrique, Paris.

August, XXXV, No. 5, pp. 449-512.

47 Technic and Benefits of Gynecologic Massage in Treatment of Plastic Infiltration and Pelvic Exudates. Bourcart.
48 Modifications in the Blood in Puerperal Infection. (Modifications globulaires du sang dans l'infection puerpérale.) E. Exchaquet.
49 Three Cases of Long Delay Before Recurrence and Generalization After Incomplete Operations on Mixed Ovarian Cysts. (Retard prolongé des récidives et de la généralisation dans les cas de kystes mixtes des ovaires, malgré la limitation forcée des opérations d'exérèse.) E. Vincent.
50 Hypertrophy of the Clitoris. A. Broca.

Archives des Maladies du Cœur, Paris.

August, I, No. 8, pp. 457-504.

51 Pseudoaneurismal Dilatation of Sinus of Valsalva with Various Malformations of Heart. E. Devic and P. Savy.
52 Hemorrhagic Purpura Following Contusion of Kidney Region. E. Lenoble.

Presse Médicale, Paris.

August 19, XVI, No. 67, pp. 529-536.

53 The Lipoids. H. Iscovesco.
54 Present Status of Serum Treatment of Tetanus. L. Lagane.

August 22, No. 68, pp. 537-544.

55 *Acute Tuberculosis Simulating Typhoid. (Typhobacillose de Landouzy. Diagnostic bactériologique pendant la période d'état.) H. Gougerot.

55. **Acute Tuberculosis Simulating Typhoid.**—The clinical aspect of Landouzy's typhobacillosis is that of some form of typhoid, the absence of rose spots being almost the only distinguishing feature; and even the spots were present in ten of Landouzy's first series of 200 cases. Certainty of diagnosis is obtained only by inoculation of animals with blood or with the sediment from centrifugated urine. This typhobacillosis terminates fatally during the acute period or it may end in apparent recovery with localization of the tuberculous process; only exceptionally is the outcome a complete cure. Recurrence has sometimes been observed. Gougerot has been able to reproduce the syndrome in its various types in rabbits by inoculation in the vein of the ear with bird bacilli and homogeneized human bacilli. He has thus reproduced even the type which develops in two stages, and also the definitely curable type. In the clinic, the impending second phase imposes the necessity for extra careful supervision of the convalescence to prevent localization of the tuberculosis. This type of typhobacillosis is so frequent that it should be borne in mind in every case of typhoid.

Archiv für Gynaekologie, Berlin.

LXXXVI, No. 1, pp. 1-253. Last indexed, August 15, p. 630.

56 Placenta Tumor. A. Ravano.
57 Case of Thoracopagus Tetrabrachius. H. v. Oeynhausen.
58 *Duodenal Occlusion. (Duodenalverschluss.) B. Rosenthal.
59 *Importance of Hemolytic Streptococci in Puerperal Infection. (Bedeutung der hämolytischen Streptokokken für die puerperale Infection.) T. Heyemann.
60 Histology of Hydatidiform Mole. (Histologie der Blasenmole.) F. Daels.
61 Influence of Gravity on Production of Frontal Presentation. (Einfluss der Schwerkraft auf die Entstehung der Schädellagen.) L. Seitz.
62 Pathology and Therapy of Chondrodystrophic Dwarf Pelvis. (Chondrodystrophischen Zwergbecken.) F. Engelmann.
63 *Mutual Relations of Diabetes and Pregnancy. (Zuckerkrankheit und Schwangerschaft in ihren Wechselbeziehungen.) H. Offergeld.
64 Ovarian Pregnancy Terminating in Formation of Lithopedion. (Ausgetragene Ovarialschwangerschaft mit Ausgang in Lithokelyphopädionbildung.) W. Weibel.
65 Spontaneous Childbirth with Narrow Pelvis. (Zur Spontangeburt bei engem Becken, und zu Baisch, Reformen in der Therapie des engen Beckens.) T. Leisewitz.

58. **Duodenal Occlusion Curable by Posture.**—Rosenthal adds two more to the few cases on record in which menacing postoperative ileus was arrested as if by magic by turning the patient on his stomach. The occlusion is the result of traction on the mesentery of the small intestine, which drags down with it the superior mesenteric artery as it crosses over the duodenum. The probable mechanism of the occlusion is discussed in detail and a number of cases from the literature are summarized in which a retrospective diagnosis of this trouble can be made. The case reported throws unusual light on the mechanism of the condition, confirming the secondary nature of the dilatation of the stomach as also the magical efficacy of assuming the prone position. The first symptom with occlusion of the duodenum from this cause is intense thirst. The fluid excreted by the stomach in such large amounts can not be passed along into the intestine to be reabsorbed, on account of the high occlusion of the duodenum. For this reason the thirst is more extreme than with ileus from other causes. Then comes vomiting, sometimes recurring every five minutes, at other times with intervals of four or five hours or more. A characteristic feature is that large amounts are vomited while the stomach keeps constantly full of fluid. The vomit is first yellow, then greenish, then dark green and finally almost black. This of itself suggests occlusion below the papilla. When the stomach keeps constantly filling up again with the bile-impregnated fluid there must be either stenosis of the duodenum below the papilla or some abnormal communication between the stomach and the bile passages. The vomit smells sour, never feculent. Hydrochloric acid can not be detected, but pancreatic juice is always to be found in the stomach when it contains bile unless the pancreas functioning is deranged or its outlet is occluded. The temperature remains normal until the autointoxication increases. The pulse is accelerated and small, but this is from the frequent vomiting—referable to irritation of the vagus. Clay-colored stools and flatus pass under the influence of enemas. The urine is reduced in amount and contains exceptional proportions of indican. The abdomen is generally distended in the epigastrium, but elsewhere is normal until the dilatation of the stomach increases. Sometimes the abdomen is retracted; it is not tender anywhere except in the epigastrium, and there only to a slight extent. The general condition grows rapidly grave. The patient feels weak and depressed from the frequent vomiting and tormented by the intense thirst which is only transiently relieved by saline infusion. The eyes are sunken, the tongue dry, the skin gray and flabby—the whole body showing the effects of the lack of water. The immediate recovery when the patient is turned on his stomach has never failed when the condition was differentiated in time and proper treatment applied. In some cases on record the patients recovered after lavage of the stomach and raising the pelvis—the relief probably being due to subsidence of traction on the mesentery as the pelvis was raised. If lavage of the stomach is undertaken it might be wise to pour some castor oil into the stomach to promote recovery by increasing peristalsis. If the prone position brings no relief, Rosenthal advises before resorting to another laparotomy to place the patient across the bed, in the knee-chest position, and try to manipulate the small intestine so as to release it from the small pelvis. If this can not be done the abdomen must be opened and the root of the mesentery loosened. The suggestion has been made that some of the loops of the small intestine might be fastened to prevent the intestine's slipping down again into the small pelvis: Albrecht's method of shutting off the small pelvis from the abdominal cavity might also prove useful, or tamponing. As a last resort, gastroenterostomy may be necessary, but none of the patients thus treated recovered.

59. **Hemolytic Streptococci in Puerperal Infection.**—Heynemann endorses the great practical value of discovery of hemolytic properties in the streptococci in puerperal infection as a sign of extra virulence on the part of the germs. The nonhemolytic streptococci were found only in the cases of milder infection, in his experience. A single examination of the streptococci found in the vaginal and uterine secretions is thus liable to solve the question as to the seriousness of the infection observed, and thus afford indications for treatment.

63. **Diabetes and Pregnancy.**—Offergeld reports two cases of pregnancy in diabetic women. One of the patients succumbed during delivery; the other passed through the childbirth without much disturbance. He has been able to collect from the literature 63 cases of pregnancy occurring in diabetics or of diabetes developing in the course of a pregnancy, which he tabulates for comparison. Of the 57 women, 17 died in coma in connection with the pregnancy, and 14 of the others succumbed in the following thirty months, while nothing is known of the later history of 29 women who survived the pregnancy. The total mortality is thus at least 50 per cent. in thirty months; and the mortality of the children is still

higher, over 66.6 per cent. In the 25 cases in which the fetus had died, the death of the mother followed in 17 cases. On account of the occasional cases in which a diabetic woman seems to pass unscathed through the pregnancy, treatment must be strictly individualized. The indications are the same as outside of diabetes in regard to management of the pregnancy. In 10 of the total 63 cases hydramnios was observed, requiring artificial termination of the pregnancy in 4 cases. It is notable, however, that vicious presentations and postpartum hemorrhage were not often observed with the hydramnios under these conditions. The physician should be prepared to terminate the pregnancy at any moment if serious symptoms develop. Efforts must be made to counteract the chronic deficient nourishment in pregnancy and the consequent injury of the liver; this is best accomplished by interruption of the pregnancy, but if coma has already developed, it is too late, as a rule. In 3 of the cases on record the coma did not prove fatal and improvement followed, although transient. If delivery occurs during coma, it should be hastened in every way; the fetus succumbs inevitably if the mother has coma. It generally develops during or soon after the childbirth, and it is still an open question whether a carefully induced premature delivery is more of a strain on the woman's organism than delivery at term when the organism has been under the influence of the diabetes for the additional months. In any event, Offergeld concludes, the fear of eventual development of coma should not deter from inducing premature delivery if it is otherwise indicated. The entire 63 cases are summarized and analyzed from various points of view.

Archiv für Verdauungs-Krankheiten, Berlin.

August 12, XIV, No. 4, pp. 369-478.

66 *Fistula Between Lung and Esophagus. (Lungen-Speiseröhrenfistein.) F. Pachnio.
67 Lack of Connection Between Proportion of Indican in the Urine and Indol in the Stools. (Mangel von Relation zwischen Harnindikan und Kotindol.) W. v. Moraczewski.
68 Three Cases of Benign Stenosis of Pylorus Simulating Gallstone Affections. (Fälle von Ischochymie, Gallensteinerkrankung vortäuschend.) M. Einhorn.
69 *Standards for Proportions of Constituents of Normal Stools. (Zur Lehre von den Abführmitteln.) H. Ury.
70 *Functional Stomach Tests in Diagnosis of Ulcers of Stomach. (Bedeutung der Magenfunktionsuntersuchung für die Diagnose des Ulcus ventriculi.) A. Borgbjärg. Commenced in No. 3.

66. **Fistula Between the Lung and Esophagus.**—Pachnio reports a case in which an old tuberculous process in the lung had caused morbid changes in the surrounding tissues which then healed; in healing the esophagus was involved in the cicatricial retraction and this resulted in the formation of a diverticulum. The process in the lung continued, with ultimate perforation of the cavity into the diverticulum. The case was distinguished by its exceptionally chronic course.

69. **Standards for Constituents of Normal Stools.**—Ury's article is the first of a series on the action of purgatives. This one treats of the secretions and residue of food in normal stools. It issues from the chemical laboratory of the Pathologic Institute at Berlin, in charge of Salkowski. The Schmidt test diet is the basis of the research, slightly simplified. The main features of this test diet are restriction to from 0.5 up to 1.5 liters of milk; 100 gm. white bread (rolls, zwieback or crackers); from 100 to 200 gm. potato soup, and a quarter of a pound of chopped beef, of which part, at least, is raw or nearly raw. It is not necessary to measure the amount of butter, sugar, oatmeal, coffee or wine. The test diet thus modified is not difficult to enforce, and it is sufficiently uniform for purposes of research on the stools. The results of the research reported show that aqueous extraction of the normal stools allows only secretions to pass into the filtrate. The articles of food which the digestive processes have dissolved are absorbed to the last particle, with the consequence that none of these dissolved substances passes into the filtrate. He tabulates the averages of the findings from repeated tests on five normal subjects, and gives the average of the five as standards which can be used for comparison with pathologic conditions. The standards for the aqueous extract of 100 grams of absolutely dried solids are: 14.784 dried solids; 1.0483 nitrogen; 4.552 ash; 0.3944 calcium; 0.10249 chlorin; 0.0293 sulphuric acid; 3.3586 potassium chlorid plus sodium chlorid.

70. **Functional Tests for Diagnosis of Gastric Ulcer.**—Borgbjärg announces the following as the conclusions of extensive research: 1. Microscopic stagnation twelve hours after a test supper is decided evidence of the presence of an organic stomach trouble; as a rule, it is an ulcer (or carcinoma), but it may be chronic gastritis. 2. If with this stagnation of microscopic nature there is secretion of hydrochloric acid in the fasting stomach, the presence of an ulcer is still more probable. 3. If with continuous hypersecretion and microscopic stagnation there is a macroscopic stagnation—even very slight or occurring only at intervals, or if there is insufficiency of the first degree (atony), an ulcer is certainly present. 4. Continuous hypersecretion is strong evidence of the presence of a gastric ulcer. As this is almost invariably accompanied with microscopic stagnation, it will seldom be found necessary to base the diagnosis of gastric ulcer on the hypersecretion alone. The presence of a hydrochloric secretion in the fasting stomach—even in very small amounts—should always direct attention to the stomach, and if other symptoms point to the stomach, the hypersecretion indicates that these gastric disturbances are due to gastric ulcer. He believes that atony of the stomach is not an idiopathic trouble of nervous origin, but that it is usually or possibly always—like ectasia—a symptom of organic trouble, and most frequently of an ulcer. The atony may lead to ectasia, but as a rule atony is found with an ulcer located outside the pylorus, while ectasia is observed with ulcer at the pylorus. The ulcer in the pylorus is usually circular or semicircular, and, as it heals, the cicatricial retraction draws up the lumen of the pylorus. Not every ulcer is accompanied by ectasia or atony. With the ulcer at the pylorus, the musculature of the antrum may be vigorous enough to force the chyme through the partially obstructed pylorus. If the ulcer is in the antrum, the musculature suffers and atony results, but, as the pylorus is intact, the stomach empties itself and dilatation does not follow. When the ulcer involves both antrum and pylorus, even if the stenosis is but slight, there may be great insufficiency as the expelling force is enfeebled. If an ulcer in the antrum spreads to the pylorus, the atony may be followed by ectasia. He adds that as continuous hypersecretion is frequently referable to an ulcer, so alimentary and digestive hypersecretion may be produced by an ulcer—the continuous hypersecretion may be merely a long-continued digestive hypersecretion. He is convinced that digestive hypersecretion is a symptom of ulcer. Whether or not it may come from other causes is a question to be decided by future researches.

Beiträge zur klinischen Chirurgie, Tübingen.

July, LIX, No. 1, pp. 1-234.

71 *Hydatid Disease in Long Bones. (Echinokokken der langen Röhrenknochen.) A. Reich.
72 *Tuberculous Pyonephrosis without Outward Manifestations. (Geschlossene tuberkulöse Pyonephrose.) R. Krauss.
73 *Primary Tuberculosis of Mesenteric Glands. (Primäre Tuberkulose der mesenterialen Lymphdrüsen.) H. Mächtle.
74 *Spondylitic Abscesses in Posterior Mediastinum. E. Finckh.
75 Apparatus to Collect Urine After Operations on Bladder. (Nachbehandlung der suprapubischen Cystotomie.) Id.
76 *True Fractures of Neck of Femur in the Young. (Echte Schenkelalsfrakturen im kindlichen und jugendlichen Alter.) O. Haldenwang.
77 *Injuries of Ankle Region, Especially of Scaphoid Bone. (Verletzungen im Bereiche der Fusswurzelknochen mit besonderer Berücksichtigung des Os naviculare.) H. Finsterer.
78 *Traumatic Abscesses of Anterior Mediastinum. G. v. Saar.
79 Cases and Treatment of Diverticula of Male Urethra. (Divertikel der männlichen Harnröhre.) Ehrlich.
80 Plastic Operations on Penis to Remedy Congenital Adherence of Prepuce. (Posthioplastik bei kongenitaler Verwachsung von Vorhaut und Eichel.) E. Streissler.
81 Isolated Fracture of Scaphoid Bone. (Isolierte Fraktur des Os naviculare tarsi.) A. Hoffmann.
82 Tetany with Chronic Dilatation of the Stomach. (Tetanie bei chronischer Dilatatio ventriculi.) F. Brucks.

71. **Echinococcus Affections of the Long Bones.**—Reich summarizes 31 cases of operative treatment of hydatid disease of the long bones, including an unpublished one from von Bruns' clinic. The humerus was the seat of the lesion in 12 cases, the tibia in 11, the femur in 5, and there was multiple localization in 3 cases. Of the total 31 patients, 26 were cured, 7 by mutilating operations. The outcome is not known in 2 other cases; 3 patients succumbed to septic complications.

72. **Tuberculous Pyonephrosis Without External Manifestations.**—Krauss' patient was a woman of 50 who applied for relief from a large tumor in one kidney. The urine was normal on repeated examination and there were no pains. On the assumption of hydronephrosis, the kidney was exposed, and the trouble was found to be a tuberculous process which had transformed most of the kidney into a sac larger than a man's head, with several chambers, with rigid walls, not adherent to its vicinity, and containing three or four quarts of fluid. The patient has been in perfect health since the nephrectomy and has gained 27 pounds during the six months.

73. **Primary Tuberculosis of the Mesenteric Glands.**—Mächtle's interest was attracted to this subject by a case in a young woman in von Bruns' service at Tübingen. He gives the details of 14 other cases of the kind, in which all the patients were cured by removal of the tuberculous glandular tumor. There was no involvement of the intestine in any of these cases. The first symptoms are attacks of pain, the further development of the tumor causing compression and various digestive disturbances, constipation, vomiting and diarrhea, with emaciation. Palpation reveals a movable, knobby, sensitive abdominal tumor, generally on the right side. This tumor can be separated from the other abdominal organs, and sometimes a stem leading downward into the depths can be recognized. Surgical intervention not only cures the trouble, but removes a dangerous focus from the organism.

74. **Spondylitic Abscess in the Posterior Mediastinum.**—Finckh's case shows the importance for differentiation of Roentgen-ray examination in such cases.

76. **True Fracture of the Neck of the Femur in the Young.**—Haldenwang reviews 25 cases, including two personally observed. This fracture is rare under the age of 10. He reviews this material in detail, pointing out that consolidation generally occurs, and that appropriate treatment of the still recent fracture gives good prospect of healing in normal position; otherwise coxa vara almost invariably results.

77. **Injuries in the Region of the Ankle.**—Finsterer discusses this subject and gives examples of the various forms of injury and the methods of treatment followed according as the different bones in the region are more or less involved in the injury.

78. **Traumatic Abscesses of the Anterior Mediastinum.**—Saar tabulates the particulars of nine cases, including one from his own experience. The prognosis of this traumatic abscess is always grave; the outcome depends materially on energetic surgical intervention at the right moment. The diagnosis is sometimes difficult; considerable edema of the anterior wall of the chest and the disturbances in breathing are the most reliable symptoms. Treatment should include resection of some of the costal cartilages or part of the sternum, with copious drainage, if possible with the patient lying prone.

Berliner klinische Wochenschrift.

August 24, XLV, No. 34, pp. 1557-1592.

83 *Relations Between Congenital Muscular Defects, Infantile Disintegration of the Nuclei and Progressive Infantile Dystrophy of the Muscles. (Beziehungen zwischen angeborenen Muskeldefekten, infantilem Kernschwund und Dystrophia muscularis progressive infantilis.) Ziehen.

84 Two Cases of Multiple Encephalitis with Meningococcus Meningitis. Maschke.

85 Multiple Peritoneal Pseudometastases of an Ovarian Dermoid. E. Melchior.

86 Ocular Tuberculin Reaction. (Weitere Ergebnisse der Conjunctivalreaktion auf Tuberkulose.) R. Fabian and H. Knopf.

87 Deviation of Complement in Scarlet Fever. (Komplementablenkung bei Scarlatina.) H. Boas and G. Hauge.

88 *Simplification of Jakoby Solms Method for Determination of Pepsin. (Vereinfachung der Jakoby-Solmschen Ricinmethode der Pepsinbestimmung.) M. Einhorn.

89 Corporal Punishment in the Schools from Neurologic Standpoint. (Körperliche Strafen in der Schule.) E. Forster.

83. **Relations Between Congenital and Acquired Muscle Defects.**—Ziehen discusses this question in connection with a patient of 18 with congenital ophthalmoplegia, hypoglossal and facial paralysis, and absence of the pectoral muscle on the left side. He distinguishes between the group of congenital atrophic paralyses or defects and the group of atrophic paralyses which develop on a congenital predisposed soil. This group includes infantile progressive bulbar paralysis and muscular dystrophy. The two groups are distinguished by the non-progressive course of the purely congenital cases. The stationary course is noticeable, even in cases of congenital paralyses in inherited syphilis. He remarks in conclusion that injury from a forceps delivery may possibly be the explanation of the congenital predisposition in certain cases. The case described shows the necessity for refraining from diagnosing infantile disintegration of the nuclei in such cases; they should be differentiated by the pathologic anatomic basis.

88. This article also appeared in the *Medical Record*, Aug. 29, 1908, and was abstracted in THE JOURNAL, Sept. 12, 1908, p. 944.

Deutsche medizinische Wochenschrift, Berlin.

August 20, XXXIV, No. 34, pp. 1457-1496.

90 Successful Treatment of Experimental Nagana. (Tsetsekrankheit.) F. Loeffler, K. Rühs and E. Walter.

91 Determination of Atoxyl in Urine, and Course of Its Elimination. (Nachweis und Gang der Ausscheidung des Atoxyls im Harn.) G. Lockemann and M. Paucke.

92 Present Status of Pneumococcus Serum Treatment of Infecting Corneal Ulcer. (Gegenwärtige Stand der Pneumococcenserumtherapie des Ulcus serpens.) P. Römer.

93 *Operative Treatment of Hydrocephalus. Heile.

94 Relative Eupraxia with Right Hemiplegia. (Relative Eupraxie bei Rechtsgelähmten.) Liepmann.

95 *Funnel-Shaped Hystereurynter. (Erweiterung des unteren Uterinabschnittes durch einen neuen, verbesserten Konkav-Metreurynter.) N. J. Macry.

93. **Treatment of Hydrocephalus.**—Heile has noticed that the iodids were better tolerated in the treatment of hydrocephalus when their administration was preceded by puncture of the ventricle. The effects of single or repeated spinal or ventricular puncture were much better when supplemented with as large doses of potassium iodid internally as possible. The benefit from permanent drainage in many cases rebellious to puncture has led him to attempt to relieve the compression in the skull from the excess of fluid by diverting it elsewhere, especially from the spinal canal into the abdominal cavity. This technic he has applied in one clinical case with promising results. Of course it is applicable only when there is free communication between the ventricle and the spinal canal. If the foramen of Magendie is obstructed by the results of inflammation this technic is useless. His patient was a child about a year old from whom a spina bifida had been removed two days after birth. He cut a flap on one side of the old scar and drew up a loop of the large intestine. He then incised the dural sac and sutured the serosa of the bowel to the dura; this connected directly the peritoneum and dura, close to the intact spine. The pelvis was then raised and the spinal sac compressed to prevent too rapid flow of the cerebrospinal fluid during the operation. An illustration shows the exact technic of the direct serosa communication between the peritoneum and dura. The skin flap was replaced and sutured and in the course of the day the circumference of the head grew 3 cm. smaller—similar to the effect after withdrawal of large amounts of fluid by puncture. The child was doing well, the pulse good, but the attendant after 20 hours inadvertently made the child sit up, and the sudden change from the previous position with the pelvis very high caused such a flow of fluid that the child succumbed at once. Heile says that in another case of the kind he would never withdraw more than 40 or 50 c.c. at a time by puncture, preferring to repeat the puncture more frequently. In this case he drew each time from 70 to 80 c.c., and he is convinced that this contributed to the debility of the child, from the excessive loss of albumin. His experience on the cadaver has shown that access to the spinal canal is best attained by resection of the coccyx and two lower vertebræ. The peritoneum in the cul-de-sac of Douglas is then opened, and the serosa of the peritoneum sutured to the dura, thus providing a serous passage by which the fluid can be diverted into the abdominal cavity. This latter technic avoids danger of injury of important nerves, vessels and organs, as there is nothing of the kind near the coccyx, while the peritoneum is most readily reached at this point, and is opened as for an operation on the rectum.

95. **Funnel Hystereurynter.**—Macry uses a funnel-shaped hystereurynter into which the child's head slides along the lines of least resistance. It can not slide out again on either side. The article is illustrated.

Jahrbuch für Kinderheilkunde, Berlin.

August, LXVIII, No. 2, pp. 131-260.

96 *Daily Variations in Body Temperature in Healthy and Sick Infants. (Tagesschwankungen der Körpertemperatur beim gesunden und beim kranken Säugling.) F. Gofferje.

97 Pepsin in Infant Stomach and Dependence of Its Digesting Power on Presence of Hydrochloric Acid. (Vorhandensein von Pepsin im Magen des Säuglings und die Abhängigkeit seiner verdauenden Kraft von der Anwesenheit von Salzsäure.) W. Reeve-Ramsay.

98 Orthodiagraphic Study of Heart in School Children. (Orthodiagraphische Herzuntersuchungen bei Kindern im schulpflichtigen Alter.) A. Veith.

96. **Daily Variations in Temperature in Infants.**—Gofferjé has made a study of the temperature in healthy and sick infants. It keeps on a high level plane from 6 a. m. to 6 p. m., with a corresponding low level plane at night, from 10 p. m. to 4 a. m. To be truly instructive, the temperature should be recorded uniformly at 2 and 10 a. m. and at 6 p. m. The difference between the day and night plateaux was more marked in the older children, but no difference could be detected between breast children and others thriving on artificial feeding. The temperature in the axilla is that of the muscles, and is an index of the innervations of the muscles. From the record of the temperature taken in the axilla it is easy to tell just when the infant awoke, when he lay quietly, and when he cried. As the child wakes and grows lively the temperature rises, reaching its height about 10 a. m. The curve drops a little at each nap, and rises above the level at each crying spell. Febrile conditions affect the daily variations in three typical ways. The most frequent type is that in which the night reduction does not occur at all or occurs tardily, and there are occasional peaks rising above the normal diurnal plane. This is the type in dyspeptic disturbances; in severe alimentary intoxication this type is most pronounced. The peaks become sharper and more frequent, but there is no difference between the day and night levels, merely the irregular zigzag of the temperature, amounting to actual delirium of the temperature in the severest form of intestinal catarrh. This type is also observed in serum diseases. Curves are given from various affections of this and the other types, all confirming the diagnostic importance of the daily variations in the temperature of infants. In one case, for example, the projecting peaks and the delay in the night decline were observed the second day after a prophylactic injection of diphtheria antitoxin. Nothing else indicated anything wrong; the child slept quietly, but in a day or two an exanthem developed, the peaks rose higher, and the temperature did not decline in the least at night. The onset of the serum sickness in this case was revealed early by the temperature curve long before it could be otherwise detected. The second type of changes in the curve in febrile conditions is that in which the temperature line runs night and day horizontal along the day level, or moves in waves with no connection with the normal daily variations. This type includes remittent and continuous fevers, and this change from the normal type may occur without the temperature surpassing the physiologic limits. When the temperature curve runs in a horizontal line at the level of the day plane this indicates the onset of a febrile condition. In his experience this was always the premonitor of an infectious affection. He calls it *febris continua sine elevatione*. In the beginning of this research the attendants thought something was wrong with the thermometer when the infant was found sleeping quietly at night but with temperature still at the day level, although other conditions seemed to be entirely normal. In a day or so symptoms developed in every such case showing that the absence of the usual night drop was the result of the incipient morbid process. The absence of the nocturnal decline is one element of the febrile syndrome; it seems to be the first phase of continuous fever. In estimating the tuberculin reaction, this lack of the nocturnal drop in the temperature must be regarded as the equivalent of fever. The third type of disturbance in the daily variation of temperature is quite rare: The daily variations persist, but they are very much exaggerated both upward and downward. It must be borne in mind, he adds, that the glandular organs in infants represent about 6.4 per cent. of the total weight, against 3.8 per cent. in adults, while the muscles represent only 25 per cent., against 4.3 per cent. in adults.

Medizinische Klinik, Berlin.

August 16, IV, No. 33, pp. 1257-1292.

99 *Operative Mobilization of Chest Wall and Lung in Treatment of Unilateral Pulmonary Phthisis. (Pneumolysis zwecks Behandlung einseitiger Lungenphthise.) P. L. Friedrich.

100 Cerebrospinal Meningitis. L. Cohn.

101 *Hereditary Occurrence of Exophthalmic Goiter. (Zum erblichen Auftreten der Basedowschen Krankheit.) J. Grober.

102 Lumbar Puncture in Psychiatric Diagnosis. F. Chotzen. Commenced in No. 32.

103 Retrograde Incarceration of Intestines. (Weiterer Beitrag zur Kenntnis der retrograden Darminkarzeration.) E. Heller.

104 Relations Between Chronic Atrophic Rhinitis and Diphtheria. L. Wolff.

105 Pyocyanase in Ozena. Id.

106 Composition and Importance of Horny Substances. (Zusammensetzung und die Bedeutung der Hornsubstanzen.) P. G. Unna.

August 23, No. 34, pp. 1293-1328.

107 Paradysentery and Similar Affections in Children. W. Knoepfelmacher.

108 Abdominal Contusions. (Offene und subkutane Verletzungen der Bauchorgane.) R. Lampe.

109 Lupus Erythematodes and Tuberculids in General. S. Ehrmann and S. Reines.

110 Color Photography for Stereoscopic Work. (Farbige, stereoskopische Photographie.) Kudlek.

111 Effectual Balneologic Courses. (Wirksame Badekuren.) H. Zikel.

112 Action of Aggressins. (Aggressinwirkung.) P. Ikonnikoff.

99. **Operative Treatment of Unilateral Pulmonary Phthisis.**—Friedrich shows how the operative measures previously in vogue have been based on mistaken premises. Puncture, aspiration of contents of cavities and resection of the lung tissue and even general treatment all fail to realize the best effect because the walls of the cavities are rigid and distended. The mechanical conditions of the cavities interpose resistance to the healing process. Study of spontaneous healing of cavities in children shows that the cavity shrinks and the lung shrivels, and with this the pleural cavity contracts and the chest sinks in. In children, thus, every change in shape and size of the lungs brings a corresponding change in the shape of the pleural cavity and possibly of the chest. By cutting away all the ribs over the lung, with the tough muscles, the chest wall becomes soft and yielding; Nature's method of healing is imitated and promoted. The aim is to allow the affected lung to be compressed toward the hilus without the development of pneumothorax. Friedrich proposes the term "pneumolysis" for this technic, and relates promising results from it in the hands of Brauer, Frey, Spengler, Turban and von Muralt. The patients were all between the ages of 19 and 45, with predominant unilateral processes constantly progressing, under observation for years, refractory to all medicinal and climatic therapy. Nearly all had been in a febrile state for weeks or months. All expectorated from 120 to 200 or more c.c. sputum containing bacilli. As the aim was to mobilize the wall to the utmost possible extent, the ribs were cut away from their cartilage to the spine—removing the second to tenth ribs inclusive, refraining from the slightest injury of the costal pleura. About 200 cm. of ribs are thus resected in from 20 to 25 minutes, and with them the entire intercostal musculature, nerves and vessels. The anesthesia must be induced with the smallest possible amount of the drug, and the position during the operation must counteract any tendency to aspiration from the diseased into the still sound lung. The only trouble is from the mechanical influence on the heart from the flooding of the pulmonary artery with blood as the conditions of the circulation in the lungs undergo such marked changes. The fever subsides almost at once. In less than ten weeks the sputum drops from 200 to 20 or 5 c.c., the cough subsides, and the patient increases in weight. Friedrich does not hesitate to maintain that pneumolysis should be given a trial in all cases of severe progressing unilateral pulmonary phthisis with tolerable general condition. It may yield gratifying results. Afterward, internal, dietetic and climatic therapy should be resumed with renewed energy.

101. **Hereditary Exophthalmic Goiter.**—Grober reports three cases in the same family, a brother and sisters in the 50's and a niece of 25. The family history showed that the older patients had apparently healthy parents, but an uncle and his son had diabetes. They had further two healthy brothers, but the children of one brother included the niece with exophthalmic goiter and one epileptic, while four died young. Grober comments that there seems to be in such cases hereditary

transmission of a general constitutional weakness with a predisposition to develop certain allied affections. He draws the comforting conclusion that by casual or conscious avoidance of certain factors it is possible for the members of such tainted families to escape the effects of their inherited tendency and to develop into healthy adults.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin.

August, XXVIII, No. 2, pp. 131-256.

113 Histologic Peculiarities of Vagina and Bladder During Pregnancy. (Histologische Besonderheiten von Vagina und Blase während der Gravidität.) J. Hofbauer.
114 Does the Weight of the Trunk Influence Shape of Pelvis? (Hat der Druck der Rumpflast Einfluss auf die Formbildung des Beckens?) S. Bokofzer.
115 Abdominal Pregnancy. (Bauchhöhlenschwangerschaft.) A. Jarzeff.
116 Axial Torsion of Large Intestine in Relation to Pregnancy and Childbirth. (Achsendrehung des Dickdarms in Beziehung zu Schwangerschaft und Geburt.) G. Becker.
117 Case of Typhoid Suppuration of Ovarian Tumor. (Typhusvereiterung des Ovarialtumors.) H. Gans.
118 *Missed Abortion. B. Rosinski.

118. **Missed Abortion.**—Rosinski is convinced that the retention of the dead fetus has a decidedly injurious effect on the general health of the woman, and cites two cases from his experience to sustain this view. Both of his cases seem to demonstrate the necessity for prompt evacuation of the uterus before injury to the maternal organism results. His patients presented extreme anemia with albuminuria and some edema. The effect on the uterus is especially bad, interfering with involution and impairing its future functional capacity.

Münchener medizinische Wochenschrift.

August 18, LV, No. 33, pp. 1721-1768.

119 *Sterilization of Rubber Gloves. (Gummihandschühe.) A. Fiessler, Y. Iwase and A. Döderlein.
120 Clinical and Bacteriologic Study of Paratyphoid. (Paratyphus.) A. Bingel.
121 *Full Directions for Technic of Serum Test for Syphilis. (Technik der Wassermann-Neisser-Bruckschen Serodiagnostik der Syphilis.) K. Taege.
122 *General Anesthesia and Lecithin. J. Nerking.
123 Roentgen-Ray Tests of Stomach Motor Functioning. (Magenmotilitätsprüfungen mit Hilfe der Röntgenstrahlen.) C. Kaestle.
124 Modification of Kocher's Hernia Operation. (Modifikation der Verlagerungsmethode bei der Kocherschen Bruchoperation.) H. Takata.
125 Local Anesthesia for Operations on Inguinal and Femoral Hernias. (Operation von Leisten- und Schenkelhernien in lokaler Anästhesie.) A. Nast-Kolb.
126 Technic of Walking Casts. (Technik der Gehgipsverbände.) J. Fränkel.
127 *Minor Points to Improve Schultze's Swinging. (Kleine Verbesserungen der Schultzeschen Schwingungen.) R. Ziegenspeck.
128 Boric-Acid Treatment of Otitis Media. (Borsäurebehandlung bei Mittelohreiterungen.) R. Dolger.
129 Eye Affection from Artificial Fertilizer. (Augenerkrankung mit einem künstlichen Düngemittel.) R. Hessberg.
130 Treatment of Cicatricial Contracture of Hand. (Therapie der Narbenkontraktur der Hand.) K. Vogel.

119. **Practical Technic for Sterilization of Rubber Gloves.**—The great drawback to the use of rubber gloves is that they do not bear boiling or steam sterilization without injury. In this communication from Döderlein's clinics at Tübingen and Munich it is asserted that the damage results merely from absorption of the moisture, and that it can be remedied by expelling the moisture from the rubber. This is accomplished by heating the gloves until they are thoroughly dry throughout. The gloves must not touch each other, but lie spread out on one of a set of wire netting trays. A further improvement is that the gloves after the steam sterilization are dipped, still wet, in a 20 per cent. suspension of talcum powder in alcohol. Each is then held up to drain and laid flat in the drying box through which hot air at 75 C. (167 F.) is passed for about 45 minutes. When taken out they are found covered with a thin, even coating of the talcum powder inside and out.

121. **Technic of Serum Diagnosis of Syphilis.**—Taege has been studying the details of this technic at Neisser's clinic, and gives it here with all the minor points. The articles necessary are enumerated as follows: meat-grinding machine to prepare the liver; ice chest; vacuum apparatus to concentrate the fluid by heat; a vibrating apparatus for washing out the blood corpuscles and for distributing the antigen through the salt solution; centrifuge; animal board; incubator, and the reagent and graduated glasses, pipettes, water bath, boiling pot, platinum needle and cage for the animals.

122. **Anesthesia and Lecithin.**—Nerking reviews research which seems to show that anesthetics are taken up by the lipoids, and especially by the lecithin, of the central nervous system and form a stable solution with them. According to this theory an anesthetic acts more vigorously the greater its solubility in the lipoids. The stable combination of the anesthetic with the lipoids of the central nervous system is what induces the anesthesia. He has found that if lecithin is supplied from without, after general anesthesia has been induced, the anesthetic can be attracted out of its combination with the lipoids of the central nervous system. Experiments with animals have constantly demonstrated that the anesthesia can be shortened or suspended altogether if a suspension of lecithin is injected intravenously soon after the animal has come under the influence of the anesthetic.

127. **Schultze's Swinging.**—Ziegenspeck does not approve of the Ogata or Schröder technic as he has witnessed a case of rupture of the liver afterward. The main advantage of Schultze's swinging is that the gravitation of the liver causes artificial respiration not only of the costal, but also of the abdominal and diaphragmatic type. He suggests, as a further improvement, to take the head between the two little fingers and let the body hang down before seizing the shoulder and chest of the child with the fingers according to Schultze's directions. This insures that the trachea and spine run parallel before the swinging is begun. He also stops the upward swing below the level of the chest, not at head level, and completes this movement, very gently, with a forward movement at an angle of 45 degrees with the horizon, so that the abdomen is bent over gently. Before proceeding from this gentle movement to the forcible downward movement, he makes a brief pause, allowing a slight rest before starting the vigorous downward movement.

Wiener klinische Wochenschrift.

August 29, XXI, No. 34, pp. 1293-1330.

131 Proportion of Tubercle Bacilli in Commercial Milk and Dairy Products at Leipsic. (Tuberkelbazillengehalt der in Leipzig zum Verkauf kommenden Milch und Molkereiprodukte.) A. Eber.
132 Theories of Origin of Senile Cataract. (Entstehung der Alterskatarakt.) R. Possek.
133 Pulsating Vessels in the Throat. (Befunde von pulsierenden Gefässen im Rachen.) S. Tenzer.
134 *Examination of the Blood in Various Peripheral Vascular Provinces, with Circulatory Disturbances. (Blutuntersuchung in verschiedenen peripheren Gefässprovinzen bei Zirkulationsstörung.) M. Krämer.

134. **Examination of Blood at the Periphery.**—Krämer gives the findings in the blood drawn from the ear, finger and toe of a number of bedridden patients with various circulatory disturbances. In case of defective circulation there is generally an accumulation of red corpuscles in the blood from the toe. The specific gravity of the toe blood is also increased. This difference between blood from the toe and from the ear is a sign of insufficient heart action.

Zentralblatt für Gynäkologie, Leipsic.

August 22, XXXII, No. 34, pp. 1113-1136.

135 L. Goth's Technic for Treatment of Postpartum Hemorrhage from Atony of Uterus. (Neuer Handgriff zur Behandlung der atonischen Nachblutungen.) G. Zickel.
136 *Simple Technic for Management of Delivery After Vaginofixation. E. Schroeder.
137 Circular Laceration of Vagina. (Zirkulärer Abriss der Vagina am Introitus.) A. Weischer.

August 29, No. 35, pp. 1137-1168.

138 Cure of Insufficiency of Bladder Sphincter by Drawing Forward the Uterus. (Beseitigung einer Insuffizienz des Sphincter vesicæ durch Verlagerung des Uterus.) E. Schroeder.
139 *The Curette and Treatment of Abortion. F. Engelmann.
140 Transplantation of Epithelium of the Vagina to Cure Erosions in the Portio Vaginalis. (Transplantation des Scheidenepithels als neues Verfahren zur Heilung der Erosionen der Portio vaginalis.) V. Frommer.

136. **Management of Childbirth After Vaginofixation.**—Schroeder relates that he has carried four women through a confinement after a low vaginofixation of the uterus without isolated suture of the peritoneum. Another woman who had had three abortions before the fixation, aborted again afterward. In the other cases delivery proceeded naturally. In one there was transverse presentation, requiring version and

extraction. In another case the external os had receded during labor to a point behind and above the promontory. He introduced half of his hand into the uterus past the internal os and exerted gentle traction forward and downward. This brought the cervix and lower segment of the uterus and the child's head down into the pelvis with surprising ease.

139. **The Curette in Treatment of Abortion.**—Engelmann has been trying to ascertain how extensively the curette is used by general practitioners in treatment of abortion in the first months of pregnancy. He sent a question blank to 80 physicians in and around his city, Dortmund, and received replies which showed that 54 colleagues had had 1,500 cases of abortion in their charge during the year, and that 37 used the curette unconditionally and 9 under certain conditions. Only 7 refuse to use it under any circumstances. These groups do not include specialists, and the physicians who reported the largest number of cases of abortion are the ones who are unconditional advocates of the curette. These findings show, he says, that the curette evidently does not deserve the wholesale denunciation poured on it by certain writers.

Grèce Médicale, Syra.

July 15, X, Nos. 13-14, pp. 25-28.

141 Malaria in Greece During 1907, and Work of Antimalaria League. C. Savas. Commenced in No. 11.

Policlinico, Rome.

August 23, XV, Practical Section, No. 34, pp. 1061-1092.

142 Morphology of Bacilli of Malta Fever. A. Amato.

August, Surgical Section, No. 8, pp. 329-376.

143 *Pseudotuberculous Peritonitis from Relics of Vegetables. R. Alessandri.
144 *Experimental Pericardiectomy and Its Possible Therapeutic Application. G. Parlavecchio.
145 *Suppurative Pancreatitis. M. Fasano.

143. **Pseudotuberculosis of the Peritoneum.**—Alessandri reviews ten cases from the literature in which tubercles were found on the peritoneum, and tuberculous peritonitis was diagnosed, but the microscope showed that the tubercles were merely the local reaction to the eggs of parasites or to foreign bodies. In four other cases the pseudotuberculosis was the result of a local reaction to small fragments of vegetable residue escaping into the peritoneum. He reports a case, from his own experience, in a woman of 26 with digestive disturbances for some years. Symptoms finally developed suggesting abdominal mischief, and on the assumption of adhesions the abdomen was opened. The stomach, omentum and liver were found studded with tubercles, with the greater number around a point in the stomach wall where there were traces of a healed ulcer. The adhesions were detached and the abdomen was sutured. Diagnosis was made of tuberculous peritonitis. Microscopic examination of two or three scraps excised from a tubercle showed that it consisted of giant cells with particles of vegetable cells, giving the starch reaction, with no traces of tuberculosis. The vegetable residue had probably escaped from the stomach through the ulcer and had induced the local reaction. The patient has been in the best of health since.

144. **Experimental Pericardiectomy.**—Parlavecchio has been conducting considerable experimental research on the question whether or not pericardiectomy could ever have a therapeutic application. A number of cases are on record of congenital absence of the pericardium, and in most of these, which he summarizes, there were no disturbances calling attention to its absence, which was an autopsy surprise. There were circulatory disturbances in a few, but the prognosis of this defect seems to be good when the thoracic organs are normal. Experiments on ten dogs showed that pericardiectomy is an operation on about the same plane as splenectomy or partial thyroidectomy. It should be regarded only as a last resort, but under these conditions it has good prospects of success. Broad resection of the pericardium may, therefore, be considered in cancer of the adjoining organs or in chronic pericarditis resisting conservative measures. The pericardiectomy would leave a defect which might favor infection of the pleura, but pleurisy is much easier to cure than pericarditis, and it is the lesser of two evils. The Rydygier technic gives ample access. He does not try to avoid sacrificing the left phrenic nerve, having found that the functions of the diaphragm do not suffer by its removal, while its retention might result in dangerous adhesion of the nerve to the heart. The technic should be dominated by the necessity of avoiding injury of the auricles and large vessels and to refrain from touching the right wall of the pericardium, for fear of injuring the phrenic nerve or the other pleura, which would be liable to entail paralysis of the diaphragm or bilateral pneumothorax. In none of his dogs were the adhesions after pericardiectomy very calamitous. The fewest adhesions were found in dogs with more extensive resection. Some of the dogs are in apparent good health to date, five or six months since the operation, although all grew thin at first and the left ventricle became hypertrophied.

145. **Suppurative Pancreatitis.**—Fasano's patient was a girl of 13. An operation was performed as the last resort, but the advanced autointoxication, stercoremia and complete paralysis of the intestine rendered the intervention futile. The syndrome presented is studied from the differentiating point of view, with analysis of the corresponding literature.

Sei-I-Kwai Medical Journal, Tokyo.

July 31, XXV, No. 7, pp. 305-314.

146 *The Extirpation of Bugs. R. Oka. Commenced in No. 6.

146. **Extermination of Vermin.**—Oka's report deals mainly with vermin in barracks, and describes numerous methods of extermination practiced. None was found entirely satisfactory, but the best results seemed to follow pouring a 15 per cent. solution of caustic soda into the crevices from the spout of a teapot. Referring to the bites, Oka says that when the region swells or itches, sucking the region stung for 25 or 30 minutes, will give relief and cure if repeated once or twice.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

ANATOMY, DESCRIPTIVE AND SURGICAL. By Henry Gray, F.R.S., Lecturer on Anatomy at St. George's Hospital Medical College, London. 17th Edition. Revised and Re-edited with additions by John Chalmers DaCosta, M.D., Professor of Principles of Surgery and of Clinical Surgery in Jefferson Medical College, Philadelphia, and Edward Anthony Spitzka, M.D., Professor of General Anatomy in Jefferson Medical College, Philadelphia. Cloth. Pp. 1614, with illustrations. Price, $6.00. Philadelphia: Lea & Febiger, 1908.

GYNECOLOGY AND ABDOMINAL SURGERY. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.), Professor of Gynecologic Surgery at Johns Hopkins University, Baltimore, and Charles P. Noble, M.D., S.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. Cloth. Pp. 862, with illustrations. Price, $8.00. Vol. II. Philadelphia: W. B. Saunders Co., 1908.

GENERAL SURGERY. By Ehrich Lexer, M.D., Professor of Surgery, University of Berlin. Translated from Second German Edition by Dean Lewis, M.D., Instructor in Surgery, Rush Medical College. Edited by Arthur Dean Bevan, M.D., Professor of Surgery, Rush Medical College. Cloth. Pp. 1041, with illustrations. Price, $6.00. New York: D. Appleton & Co., 1908.

DISEASES OF THE SKIN AND THE ERUPTIVE FEVERS. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Infectious Eruptive Diseases in Philadelphia Polyclinic and College for Graduates in Medicine. Cloth. Pp. 534, with illustrations. Price, $3.00. Philadelphia: W. B. Saunders Co., 1908.

THE ORIGIN AND PREVALENCE OF TYPHOID FEVER in the District of Columbia. (1907).) Hygienic Laboratory Bulletin No. 44. May, 1908. Report No. 2. By M. J. Rosenau, L. L. Lumsden and Joseph H. Kastle. Paper. Pp. 63, with illustrations. Washington: Government Printing Office, 1908.

FOURTH ANNUAL REPORT OF THE HENRY PHIPPS INSTITUTE for the Study, Treatment and Prevention of Tuberculosis. Feb. 1, 1906, to Feb. 1, 1907. Edited by Joseph Walsh, A.M., M.D. Paper. Pp. 429, with illustrations. Philadelphia: Published by the Henry Phipps Institute, 1908.

TEXT-BOOK OF HUMAN PHYSIOLOGY. By George V. N. Dearborn, A.M. (Harv.) Ph.D., M.D. (Col.), Professor of Physiology in the Medical and Dental Schools of Tufts College, Boston. Cloth. Pp. 550, with illustrations. Price, $4.00. Philadelphia: Lea & Febiger, 1908.

TRANSACTIONS OF THE SOUTHERN SURGICAL GYNECOLOGICAL ASSOCIATION. Vol. XX. Twentieth Session, Held at New Orleans, December, 1907. Edited by W. D. Haggard, M.D. Cloth. Pp. 570, with illustrations. Published by The Association, 1908.

FURTHER STUDIES ON ANAPHYLAXIS. Hygienic Laboratory Bulletin No. 45, June, 1908. By M. J. Rosenau and John F. Anderson. Paper. Pp. 61. Washington: Government Printing Office, 1908.